

FOURTH
ANNUAL REPORT



OF THE

SANITARY COMMISSIONER

WITH THE

GOVERNMENT OF INDIA.

1867.

WITH APPENDICES,

CONTAINING

RETURNS OF SICKNESS AND MORTALITY AMONG THE BRITISH AND NATIVE
TROOPS, AND ALSO AMONG THE PRISONERS IN THE BENGAL
PRESIDENCY, FOR THAT YEAR.

CALCUTTA :

OFFICE OF SUPERINTENDENT OF GOVERNMENT PRINTING.

1868.

CONTENTS.

PART I.

THE CHOLERA EPIDEMIC IN NORTHERN INDIA.

INTRODUCTION.

PARA.		PAGE
1	Importance of accurately recording its history as a whole	1
2	History of the cholera of 1861	<i>ib.</i>
3	Want of information regarding previous epidemics	<i>ib.</i>
4	The outbreak at Hurdwar anticipated	<i>ib.</i>
5	Preparations made to meet it	2
6	Division of the Report	<i>ib.</i>

SECTION I.

THE HURDWAR FAIR OF 1867.

7	Description of Hurdwar	3
8	Objects of the Annual Fair	<i>ib.</i>
9	Violence and bloodshed at former fairs	4
10	Causes of the unusual gathering in 1867	5
11	General arrangements made	<i>ib.</i>
12	Sanitary arrangements	<i>ib.</i>
13	Supply of food and water	6
14	Hospitals provided	<i>ib.</i>
15	The Fair	7
16	Supposed number of pilgrims	<i>ib.</i>
17	Meteorological phenomena at Hurdwar	8
18	Observations at Roorkee	<i>ib.</i>
19	Health of the camp	9
20	Occurrence of first case of cholera	10
21	Rapid dispersion of the pilgrims	<i>ib.</i>
22	Extent of cholera at the Fair	<i>ib.</i>
23	Cause of the appearance of cholera at Hurdwar	<i>ib.</i>
24	Did the disease arise from the want of proper sanitary conditions?	11
25	The cholera epidemic at Hurdwar in 1783	<i>ib.</i>
26	Cholera generally absent from Hurdwar fairs	12
27	Can filth generate cholera?	<i>ib.</i>
28	Filthy state of towns and villages does not produce cholera	<i>ib.</i>
29	Apparent evidence to the contrary	<i>ib.</i>
30	Was the cholera the result of atmospheric influences?	13
31	Difficulty of the question	<i>ib.</i>
32	The effects of the rain	14
33	Question of importation	<i>ib.</i>
34	Cholera at other places in November and December 1866	15
35	Cholera among the Civil population in the end of 1866	<i>ib.</i>
36	Cholera in the beginning of 1867	<i>ib.</i>
37	Cholera in the Terai early in 1867	16
38	Cholera in Sir Jung Bahadoor's camp in January 1867	<i>ib.</i>
39	Possible importation from Bhutpore	<i>ib.</i>
40	Conclusion as to the cause of the outbreak	17
41	Native opinion of the conservancy arrangements	<i>ib.</i>
42	Difficulties in making arrangements	18
43	Defects in the arrangements	<i>ib.</i>
44	Possible contamination of the water	19
45	Objections to this theory considered	<i>ib.</i>
46	Facts supporting the opinion	20
47	Further particulars from Dr. Cutcliffe's second Report...	<i>ib.</i>
48	Importance of the rapid dispersion of the pilgrims	23

SECTION II.

THE RETURN OF THE PILGRIMS TO THEIR HOMES AND THE GENERAL
DISTRIBUTION OF THE CHOLERA OF 1867.

PARA.		PAGE
49	Condition of the pilgrims after the fair	25
50	Sources from which information has been obtained	<i>ib.</i>
51	Chief questions to be decided	26
52	Order in which the several parts of the country will be taken	<i>ib.</i>
53	In the Saharunpore District cholera believed to have been disseminated by pilgrims	27
54	Its apparent importation into the Cantonment of Roorkee	<i>ib.</i>
55	The disease in the Deyrah District	28
56	The disease at Mussoorie and at Landour	<i>ib.</i>
57	The epidemic in the Mozuffernugger District	<i>ib.</i>
58	Evidence of importation	29
59	The disease in the Bijnour District	<i>ib.</i>
60	Evidence of importation	<i>ib.</i>
61	Evidence of importation into the Moradabad District	30
62	The European Troops in Cantonments suffer slightly	<i>ib.</i>
63	A few cases among the Native Troops	<i>ib.</i>
64	The disease appears at Nynce Tal	31
65	Appearance of cholera at Almorah	<i>ib.</i>
66	Facts of importation into Kumaon given by the Commissioner	32
67	Spread of the disease in the Terai Pergunnahs	<i>ib.</i>
68	Its appearance in the Bareilly District	33
69	Only three cases among the European Troops	<i>ib.</i>
70	The disease in the Budaon District	<i>ib.</i>
71	Severe outbreak in the Shajehanpore District	34
72	The prisoners attacked	<i>ib.</i>
73	The disease in Cantonments	<i>ib.</i>
74	Part of the Regiment moves into camp	<i>ib.</i>
75	Remaining portion moves	35
76	More favorable results in the Detachment first moved	36
77	Oude and some other parts to be considered afterwards	<i>ib.</i>
78	Occurrences in the Meerut District	<i>ib.</i>
79	Strong evidence of importation	37
80	Outbreak among the European Troops at Meerut	<i>ib.</i>
81	Extreme virulence in the Buffs	38
82	Few cases among the Artillery and Hussars	<i>ib.</i>
83	The disease in the Boolundshuhur District	39
84	The disease in the Allyghur District	<i>ib.</i>
85	The disease in the Punjab	40
86	The disease in the Goorgaon District	<i>ib.</i>
87	Cholera in the Delhi District	41
88	Opinion as to its origin	<i>ib.</i>
89	Immunity of the Prisoners and Troops	<i>ib.</i>
90	Supplementary information regarding the Delhi epidemic	42
91	The disease in the Rohtuck District	<i>ib.</i>
92	It appears in the Hissar District	<i>ib.</i>
93	Its prevalence in the Sirsa District	<i>ib.</i>
94	The epidemic in the Kurnaul District	43
95	The importation of cholera into Kurnaul	<i>ib.</i>
96	Cholera in the Umballah District	44
97	Civil Surgeon has no doubt it was imported	<i>ib.</i>
98	The Cantonment of Umballah	45
99	Cholera among the European Troops	<i>ib.</i>
100	Cholera among the Native Troops	46
101	Second outbreak in Cantonments	<i>ib.</i>
102	Umballah Jails escape	47
103	Cholera at Kussowlie	<i>ib.</i>
104	Its appearance in the Hill Villages	<i>ib.</i>
105	Dughala exempt	48
106	The disease at Subathoo in the 90th Light Infantry	<i>ib.</i>
107	The Regiment moved into camp	<i>ib.</i>
108	Re-appearance of the disease in Subathoo	49

PARA.		PAGE
109	Its re-appearance in camp ...	49
110	Previous unhealthy condition of the Regiment ...	<i>ib.</i>
111	Disease chiefly confined to the old Barracks ...	<i>ib.</i>
112	Outbreak at Simla ...	50
113	The epidemic in the Loodianah District ...	<i>ib.</i>
114	Apparent importation into Ferozepore ...	51
115	Opinion of the Civil Surgeon ...	<i>ib.</i>
116	The epidemic in the Ferozepore Cantonments ...	<i>ib.</i>
117	The disease in the Jullundur District ...	52
118	Illustrations of apparent communication of the disease ...	<i>ib.</i>
119	Cholera amongst European Troops in Jullundur ...	53
120	Movements of the Troops ...	54
121	Cholera in the Kangra District ...	<i>ib.</i>
122	Cholera in the Dhurmsala Jail ...	55
123	A few cases among the Troops... ...	<i>ib.</i>
124	Particulars regarding the Hooshiarpore District ...	<i>ib.</i>
125	The disease appears with the pilgrims at Unritsur ...	<i>ib.</i>
126	Two cases in Govindghur Fort ...	56
127	The epidemic in the Goordaspore District... ...	<i>ib.</i>
128	Evidence of importation into the Sealkote District ...	<i>ib.</i>
129	The epidemic at Lahore ...	57
130	The disease in the Cantonment of Meean Meer ...	<i>ib.</i>
131	Second outburst in 106th Regiment and second move into camp ...	58
132	Hollokee Detachment ...	<i>ib.</i>
133	The Shahdrah Detachment ...	59
134	The families at Shalimar ...	<i>ib.</i>
135	Cases among the Artillery ...	60
136	Cholera in Lahore Fort ...	<i>ib.</i>
137	The disease in the Lahore Jail for women... ...	<i>ib.</i>
138	Evidence of communication in the Montgomery District ...	61
139	Evidence of importation into Mooltan ...	<i>ib.</i>
140	Particulars of communication at Mooltan ...	62
141	Importation of cholera into Kuhroor ...	<i>ib.</i>
142	Its late appearance in the Mozufferghur District ...	63
143	The district of Jhung suffers late ...	<i>ib.</i>
144	At Goojeranwalah, first cases pilgrims ...	<i>ib.</i>
145	At Goojerat the disease confined to pilgrims ...	<i>ib.</i>
146	The disease not traceable to pilgrims in the Shahpore District ...	64
147	Very few cases in the Jhelum District ...	<i>ib.</i>
148	Rawul Pindce in part suffered severely ...	65
149	Importation into Murree not traced ...	66
150	Cholera in Hazara... ...	<i>ib.</i>
151	The disease in the Peshawur Valley ...	<i>ib.</i>
152	Cholera at Peshawur ...	<i>ib.</i>
153	First outbreak in the Artillery ...	67
154	The Horse Artillery in camp ...	<i>ib.</i>
155	E—19 and 4—22nd Royal Artillery also suffered ...	68
156	Cholera in the 42nd Highlanders ...	<i>ib.</i>
157	Cholera in the 77th Regiment... ...	69
158	Attacks the portion left in Cantonments ...	<i>ib.</i>
159	Occurrences in camp ...	70
160	The Native Troops suffered comparatively little ...	<i>ib.</i>
161	Origin of the outbreak at Peshawur ...	<i>ib.</i>
162	Report of the Peshawur Military Committee ...	71
163	Statement of the Sub-Assistant Surgeon ...	<i>ib.</i>
164	Corroborated by the Civil Surgeon ...	72
165	Native Troops suffer at Kohat ...	<i>ib.</i>
166	Cholera attacks Bunnoo in July ...	73
167	The disease in Dera-Ishmail Khan ...	<i>ib.</i>
168	The disease in Dera-Ghazee Khan ...	<i>ib.</i>
169	The epidemic in Cashmere ...	<i>ib.</i>
170	The disease in Cabul ...	74
171	Very little cholera in the Agra Division ...	<i>ib.</i>
172	Outbreak at the Secundra Orphanage ...	

PARA.		PAGE
173	Early appearance of the disease at Bhurtpore	75
174	Cholera in the Gwalior State	<i>ib.</i>
175	No evidence of importation	<i>ib.</i>
176	The disease among the Natives	76
177	Cholera among the Europeans at Morar in May and July	<i>ib.</i>
178	Its re-appearance in August	77
179	Cases among the Artillery	<i>ib.</i>
180	Cholera amongst Native Troops	78
181	Cholera in Gwalior Fortress	<i>ib.</i>
182	In the married quarters	<i>ib.</i>
183	Cholera in Jeypore	<i>ib.</i>
184	Epidemic among the Native Troops at Deolee	79
185	Illustrations of apparent communication of the disease	<i>ib.</i>
186	Opinion of the Medical Officer of the Deolee Irregular Force	80
187	Slight prevalence in Rajpootana	<i>ib.</i>
188	Remarkable immunity of Central Provinces	<i>ib.</i>
189	Cholera in the Allahabad Division	<i>ib.</i>
190	The disease among the European Troops	81
191	Its spread in the Banda District	82
192	A few cases in Cawnpore Cantonment	<i>ib.</i>
193	Cholera in Oude; information imperfect	<i>ib.</i>
194	Its appearance among the people generally	<i>ib.</i>
195	The epidemic at Lucknow	83
196	Evidence against theory of contagion	<i>ib.</i>
197	The disease at Hurdui	<i>ib.</i>
198	Its occurrence among the European Troops at Fyzabad	<i>ib.</i>
199	Among Europeans at other stations in Oude	84
200	Among Native Troops in Oude	<i>ib.</i>
201	Outbreak in the Sectapore Jail	85
202	Slight epidemic in the Benares Division	<i>ib.</i>
203	The outbreak in Nepal	<i>ib.</i>
204	Evidence as to importation	86
205	Cholera in Behar	<i>ib.</i>
206	Unusual immunity of the Jails in Lower Bengal	<i>ib.</i>
207	Apparent importation into Monghyr Jail	87
208	The epidemic at Jessore	<i>ib.</i>
209	Pilgrims suffering from cholera did not spread the disease at Pooree	<i>ib.</i>
210	Opinion based on these facts	88
211	Evidence to the contrary	89
212	Special instances quoted	<i>ib.</i>
213	Apparent importation into Cachar	91
214	Cholera in other parts of Lower Bengal	<i>ib.</i>

SECTION III.

THE PREVENTIVE MEASURES ADOPTED AND THE RESULTS OF THE EPIDEMIC.

215	Intelligence of the outbreak early telegraphed	93
216	Early instructions issued by Punjab Government	<i>ib.</i>
217	The camp of Maharajah of Cashmere diverted	95
218	Medical arrangements	<i>ib.</i>
219	Sanitary arrangements	<i>ib.</i>
220	Similar arrangements in the North-Western Provinces	96
221	Opinions as to the results of these measures in the Punjab	<i>ib.</i>
222	Opinions from the North-Western Provinces	<i>ib.</i>
223	Doubts expressed as to their effect	97
224	Difficulty of the question	<i>ib.</i>
225	Mortality among the Civil population in the North-Western Provinces	<i>ib.</i>
226	Deaths from cholera in the Punjab	99
227	Deaths from cholera in Oude	100
228	Returns of cases incorrect	<i>ib.</i>
229	Total mortality among the people	<i>ib.</i>

PARA.		PAGE
230	Measures adopted in the Jails	101
231	Testimony to the value of quarantine in Jails	<i>ib.</i>
232	Comparative immunity of the Jails	<i>ib.</i>
233	Comparison of the Jails in 1861 and 1867	<i>ib.</i>
234	Cholera in the Jails from 1859 to 1867	102
235	Illustrated by a Diagram	<i>ib.</i>
236	Points illustrated by the Diagram	<i>ib.</i>
237	Satisfactory results in the Jails in 1867	103
238	Cholera in the European and Native Armies in previous years	<i>ib.</i>
239	Results illustrated by a Diagram	104
240	Details since 1859	<i>ib.</i>
241	Points illustrated by the Diagrams	<i>ib.</i>
242	Special measures for the prevention of cholera among European Troops	105
243	Examination of the results in each Station	<i>ib.</i>
244	Order in which the Stations will be considered	<i>ib.</i>
245	Stations attacked both in 1867 and 1861	106
246	Generally favorable results of 1867 in these Stations	<i>ib.</i>
247	The case of Meerut an exception	107
248	Sanitary measures adopted there	<i>ib.</i>
249	Cause of great fatality in the Buffs unknown	108
250	Stations attacked in 1867 which escaped in 1861	<i>ib.</i>
251	Nowshera and Peshawur suffered in 1862... ..	109
252	Epidemic in the 42nd Highlanders	<i>ib.</i>
253	Particulars regarding the 42nd Regiment wanting	110
254	The 77th Regiment and Royal Artillery	<i>ib.</i>
255	Comparison of admissions and deaths in the European Garrison, Peshawur	<i>ib.</i>
256	No direct connection traceable between the epidemic and the pilgrims	111
257	Stations attacked in 1861 which escaped in 1867	<i>ib.</i>
258	Stations which escaped in both epidemics... ..	112
259	European Troops in 1861 and 1867 in parts not visited by the epidemics	<i>ib.</i>
260	Cholera among Native Troops in 1861 and 1867	<i>ib.</i>
261	Native Troops attacked in 1867 at Stations which did not suffer in 1861	113
262	General results of the epidemic among British Soldiers	<i>ib.</i>
263	Total mortality among men, women, and children	<i>ib.</i>
264	Effects of going into camp on the spread of cholera	114
265	Cases in which the disease entirely disappeared on removal into camp	<i>ib.</i>
266	Cases in which no fresh seizures occurred after third day	115
267	Regiments which suffered severely in spite of moving	<i>ib.</i>
268	General conclusion as regards moving	<i>ib.</i>
269	After-results of moving into camp	116
270	After-results of moving into camp in 1867	<i>ib.</i>
271	Results in which portion only of the Garrison moved	<i>ib.</i>
272	Results at Peshawur	117
273	Good results of moving Native Troops into camp	118
274	Good results in checking the disease among prisoners	<i>ib.</i>
275	Benefit of moving illustrated at Shajehanpore	<i>ib.</i>
276	Varied opinions on the effects of moving	119
277	Evidence at Shajehanpore in favor of early removal	<i>ib.</i>
278	Further comparison of the epidemics of 1861 and 1867	120
279	Comparative prevalence of cholera in the different Arms	<i>ib.</i>
280	Comparative prevalence among Officers and men	121
281	* Comparative prevalence among men, women, and children	122
282	Comparative prevalence among children and adults	123
283	Comparative prevalence at different Stations	<i>ib.</i>
284	Influence of age	<i>ib.</i>
285	Influence of habits	124
286	Influence of previous state of health	<i>ib.</i>
287	Number attacked in Hospital	<i>ib.</i>
288	Hours of attack and admission	125
289	Duration of disease	<i>ib.</i>
290	Proportion of deaths to cases	<i>ib.</i>
291	Proportion of deaths to cases among Europeans and Natives compared	126
292	Comparative prevalence of cholera among European and Native Soldiers	<i>ib.</i>
293	Cause of comparative immunity of Native Soldiers	127

SECTION IV. GENERAL CONCLUSIONS.

PARA.		PAGE
294	Conclusions to be drawn from the history of the epidemic	129
295	Arrangements regarding fairs	<i>ib.</i>
296	Great expenditure required	<i>ib.</i>
297	Funds how to be raised	130
298	Nature and amount of the rate to be levied	<i>ib.</i>
299	Diminution of the number of pilgrims	131
300	The effect of the dispersion of the pilgrims in spreading the cholera	<i>ib.</i>
301	That the pilgrims carried cholera is indisputable	<i>ib.</i>
302	This fact an evidence of communicability	<i>ib.</i>
303	General facts of importation	132
304	General evidence of importation	133
305	The first cases nearly always pilgrims	<i>ib.</i>
306	Decided opinions of the Medical Officers	134
307	The evidence cannot be set aside	<i>ib.</i>
308	If not by the pilgrims, how was the disease spread?	<i>ib.</i>
309	Analogy of other diseases	135
310	Dr. Bryden's opinions	<i>ib.</i>
311	Practical conclusions to be drawn	136
312	A general quarantine impossible	<i>ib.</i>
313	Opinion of English Authorities on quarantine	<i>ib.</i>
314	General preventive measures recommended	137
315	Quarantine as regards Cantonments	<i>ib.</i>
316	Quarantine to be permitted by Municipalities	<i>ib.</i>
317	General sanitation of towns and villages	138
318	Measures for preventing cholera in Jails	<i>ib.</i>
319	Rules drawn up by Sanitary Commission	<i>ib.</i>
320	Quarantine in Jails considered separately	139
321	Sanitary Commission's Rules compared with the views of latest English Authorities	<i>ib.</i>
322	Agreement between the Rules and those of the English Authorities	141
323	Measures to prevent cholera among European Troops	142
324	Recent modifications of General Orders on the subject	<i>ib.</i>
325	Permanent cholera encamping grounds proposed	143
326	More detailed information required	<i>ib.</i>
327	Points to be observed in moving into camp	<i>ib.</i>
328	The terms "Sporadic" and "Choleraic Diarrhoea" objectionable	144
329	Purification of buildings	<i>ib.</i>
330	The period of incubation	<i>ib.</i>
331	Information to be obtained in any future epidemic	145
332	Assistance received in preparing this Report	<i>it.</i>

PART II.

EUROPEAN TROOPS.

333	Amount of sickness in 1867	147
334	Mortality of 1867	<i>ib.</i>
335	Special report on the cholera epidemic of 1867	<i>ib.</i>
336	Proportion of deaths due to cholera	148
337	Effect of the epidemic on the statistics of the year	<i>ib.</i>
338	Chief causes of mortality in 1867	<i>ib.</i>
339	Results in Bengal Proper	149
340	Results in Dinapore, Benares, Oudh, and Cawnpore	<i>ib.</i>
341	Results in the Meerut and Rohilcund Districts	150
342	Results in Agra and Central India	151
343	Results in the Punjab	<i>ib.</i>
344	Chief causes of sickness in different groups	152
345	Chief causes of mortality in different groups	153
346	Small-pox in 1867	154
347	Small-pox among European and Native Troops compared	<i>ib.</i>

PARA.		PAGE
348	Fevers in 1866	154
349	Fevers among European and Native Troops compared	155
350	Apoplexy in 1867	<i>ib.</i>
351	Dysentery and Diarrhoea in 1867	156
352	Bowel complaints among European and Native Troops	<i>ib.</i>
353	Reduced fatality of dysentery	<i>ib.</i>
354	Hepatitis in 1867	<i>ib.</i>
355	Hepatitis among European and Native Soldiers	157
356	Delirium Tremens in 1867	<i>ib.</i>
357	Rules for the prevention of venereal disease	<i>ib.</i>
358	Special Reports received	<i>ib.</i>
359	Venereal disease at different Stations, 1859-1868	158
360	Venereal disease in 1867 compared with previous years	160
361	Results of the measures adopted in Oudh	<i>ib.</i>
362	Extension of the Rules to neighbourhood of Cantonments	164
363	Relation of age to mortality	<i>ib.</i>
364	Influence of length of service	165
365	Comparative Returns of married and unmarried men in 1866	168
366	Proportion of married and unmarried Soldiers	169
367	Comparative sickness and mortality among married and unmarried in 1867	170
368	Dr. Bryden's Memorandum on married and unmarried	171
369	Comparative sickness and mortality among temperate and intemperate in 1866	172
370	Comparative sickness and mortality among the temperate and intemperate in 1867	173
371	Invaliding in 1867	174
372	Comparison of Stations and Regiments	<i>ib.</i>
373	Sickness and mortality among women and children	175
374	Registration of deaths within Military Cantonments	<i>ib.</i>
375	Compulsory vaccination in Military Cantonments	<i>ib.</i>
376	Plans of Military Stations	176
377	Details of Barrack accommodation	<i>ib.</i>
378	Cots for European Troops	<i>ib.</i>
379	Analysis of Water	<i>ib.</i>
380	Results of the Analyses	177
381	Practical action taken	178
382	Purification of wells	<i>ib.</i>
383	Effect of better water supply on Delhi sores	<i>ib.</i>
384	Filters now in use	179
385	Objections to them	<i>ib.</i>
386	Requirements of a good filter	180
387	Increased care in the management of present means of filtering	<i>ib.</i>
388	MacDougall's disinfectant	<i>ib.</i>
389	Soldiers' Gardens	181
390	Regimental Workshops	182
391	Employment of Soldiers on Public Works	<i>ib.</i>
392	Military Gymnastics	184
393	Entozoon in Ration Beef	<i>ib.</i>
394	Abandonment of Parismath	<i>ib.</i>
395	Space in Coasting Transports	185
396	Alteration in Prison diet	<i>ib.</i>
397	Military Prisons for India	186
398	Monthly Sanitary Reports	<i>ib.</i>
399	Sanitary Survey of Stations	<i>ib.</i>

PART III.

NATIVE TROOPS.

400	Strength of regular Native Army	187
401	Total mortality	<i>ib.</i>
402	Gain and loss of regular Native Army during 1867	<i>ib.</i>
403	Amount of sickness	188
404	Chief forms of sickness	<i>ib.</i>

PARA.		PAGE
405	Mortality '	189
406	Chief causes of mortality	<i>ib.</i>
407	Cholera in 1867	<i>ib.</i>
408	Causes of slight prevalence of cholera among Native Soldiers	190
409	The use of latrines... ..	<i>ib.</i>
410	Nature of accommodation	191
411	Small-pox in 1867	<i>ib.</i>
412	Fevers in 1867	<i>ib.</i>
413	Dysentery and Diarrhœa	193
414	Venereal diseases	<i>ib.</i>
415	Stations compared according to ratio of daily sick	195
416	Comparison according to admissions	<i>ib.</i>
417	Comparison according to mortality	196
418	Comparison of Regiments	<i>ib.</i>
419	Regiments of Central India Force	198
420	Punjab Irregular Force	<i>ib.</i>

PART IV.

JAILS.

421	Number of Prisoners	199
422	Extent of sickness	<i>ib.</i>
423	Extent of mortality	200
424	Chief causes of sickness	<i>ib.</i>
425	Comparative admissions from fevers among prisoners and Native Soldiers	201
426	Different circumstances of prisoners and Native Soldiers	202
427	Chief causes of mortality	<i>ib.</i>
428	Cholera specially reported on... ..	203
429	Mortality from bowel complaints	<i>ib.</i>
430	Prevalence of fevers	204
431	Contagious fever in 1867	<i>ib.</i>
432	The fever in Peshawur Jail	205
433	The epidemic in Rawul-pindee Jail	<i>ib.</i>
434	The disease in the Shahpore Jail	206
435	The epidemic in the Gondah Jail	<i>ib.</i>
436	The danger of the disease	208
437	The circumstances of the Jails attacked in the Punjab	209
438	Condition of the Gondah Jail... ..	<i>ib.</i>
439	Was the disease due to improper sanitary conditions in the North-Western Provinces?	210
440	Evidence from the Punjab	<i>ib.</i>
441	General evidence of importation in the Punjab	211
442	Practical conclusions regarding this fever... ..	212
443	Provincial statistics of Jails	<i>ib.</i>

PART V.

GENERAL POPULATION.

444	Civil Surgeon's Reports	215
445	Census of the Punjab	<i>ib.</i>
446	General Census	<i>ib.</i>
447	Crops in Bengal	<i>ib.</i>
448	Crops in the other Provinces	216
449	Meteorological observations in the North-Western Provinces	<i>ib.</i>
450	Meteorological observations in the Punjab... ..	222
451	Meteorology of Bengal	223
452	The cyclone of 1867	226
453	Meteorology of the Central Provinces	227
454	Registration of deaths, North-Western Provinces	228
455	Registration, Central Provinces	<i>ib.</i>

PARA.								PAGE
456	Registration of deaths, Punjab	...	...	...	...	• ... •	...	231
457	Vaccination in Bengal	...	...	...	...	...•	...	336
458	Vaccination in the Central Provinces	...	...	...	...	...	...	<i>ib.</i>
459	Vaccination in the North-Western Provinces	...	...	...	...	...	...	<i>ib.</i>
460	Vaccination in Oudh	...	...	...	...	•...	...	237
461	Vaccination in the Punjab	...	...	...	...	...	...	<i>ib.</i>
462	Appointment of Sanitary Commissioners	...	...	...	...	...	...	238

FROM

J. M. CUNINGHAM, M. D.,

Offg. Sanitary Commr. with the Govt. of India,

TO

THE SECRETARY TO THE GOVERNMENT OF INDIA,

Military Department.

Dated Simla, 11th September 1868.

SIR,

I HAVE the honor to submit for the information of the Government the Annual Sanitary Report for 1867.

2. The Cholera Epidemic which prevailed over Northern India forms such a remarkable feature of the year, and has so deranged the ordinary vital statistics, that a separate Section has been devoted to its history. The Report is thus divided into five parts :—

I.—The Cholera Epidemic of 1867.

II.—European Troops.

III.—Native Troops.

IV.—Jails.

V.—General Population.

3. Dr. Bryden's very valuable services again deserve special mention. With the additional data supplied by each year his statistical tables become more and more valuable. Under recent orders of the Government the statistical office has been transferred from the Medical Department to the Sanitary Commissioner with the Government of India, and I have no doubt that, under this arrangement, the Annual Tables will be rendered still more full and complete, and will be prepared with less delay. The suggestions contained in the orders of the Government (No. 516, dated 29th June), regarding an investigation into the comparative salubrity of different Stations, will receive special attention.

I have the honor to be,

SIR,

Your most obedient servant,

J. M. CUNINGHAM, M. D.,

Offg. Sanitary Commr. with the Govt. of India.

PART I.

THE CHOLERA EPIDEMIC OF 1867, IN NORTHERN INDIA.

INTRODUCTION.

It is of the utmost importance, both in a scientific and practical point of view, that the history of the great epidemic of cholera which swept over Northern India during the past year should, as far as possible, be accurately recorded, and that the details which are available regarding the European troops, the Native army, the Prisoners, and the civil population, should be considered together.

2. Of the cholera epidemic of 1861, the last of any great violence which visited the Upper Provinces, an admirable history has been preserved in the Report of the Special Commission which was appointed to trace its course, investigate its causes, and suggest what practical measures should be adopted in the future to arrest the progress of any such calamity. It will be necessary to make frequent references to this Report, to test how far the views, which were then expressed, have been verified by the experience of the late epidemic, to compare the sickness and mortality of the disease in the one year with what occurred in the other, and to examine how far the rules for the management of epidemics of cholera, which were recommended by the Commission, and adopted by the Government, have had beneficial results.

3. Of the unusual prevalence of cholera, in earlier years, no precise records are available. All that is known is, that in certain years, the disease has been more than ordinarily prevalent and fatal. Even of the outbreak of 1856, which in many respects resembled those of 1861 and 1867, and which was more fatal to the European troops than either of them, no general history is available. From the scanty and detached records which are to be had, it is impossible to say with any degree of accuracy which places were visited by the disease, what was the history of the epidemic, and what the losses it occasioned in each. This is very much to be regretted. It is only by a careful observation of the history and progress of this mysterious disease, by comparing the facts, and if need be correcting the opinions of one year by the details of another, that we can ever hope to ascertain with any accuracy the circumstances under which it is generated, the conditions which are favorable and even necessary for its spread, and the precautionary measures which are requisite to arrest its progress.

4. The history of the outbreak of 1867 is in this respect remarkable. The outbreak at Hurdwar that its occurrence was very generally feared. anticipated.

Upper India had, for more than the ordinary term of years, been free from any violent outbreak of the dreaded pestilence; a few cases had occurred in different parts of the country in the close of 1866 and commencement of 1867; the fair to be held at Hurdwar in the spring was one of unusual importance, and likely to be more than ordinarily frequented by pilgrims; the gathering of so large a number of human beings together was anticipated with unusual dread—a dread which was all the greater because sanitary authorities had drawn attention to the danger of these assemblages, and experience had shown, especially in the southern presidency, that the danger was not imaginary.

5. As early as the 19th February 1867, the Government of the North-Western Provinces called the attention of the Commissioner of the Meerut Division to the fact, that "the number of pilgrims, who are likely to assemble at the approaching Hurdwar Fair, will be very much larger than usual." The necessity for conservancy and sanitary arrangements in and near the town was insisted on, and it was remarked that it was "specially important that measures should be adopted for the daily removal and deodorization of the accumulated filth as a precaution against the outbreak of an epidemic." A special officer was accordingly appointed to superintend the medical and sanitary arrangements, and measures were adopted to place every assistance at his disposal.

6. In any account of the epidemic cholera of 1867, the fair at Hurdwar must form one of the main features of the narrative, and before proceeding to detail the arrangements which were adopted, and the subsequent circumstances which took place, it will be advisable to give some account of this great annual gathering which in 1867 assumed so much importance in the eyes of the people, and the history of which is so intimately associated with the subsequent spread of disease and death over the whole of Northern India. The history of the epidemic will thus be conveniently arranged in four separate sections:—

I.—The Hurdwar Fair of 1867.

II.—The dispersion of the pilgrims and the general distribution of the cholera of 1867, not only in connection with the return of the pilgrims to their homes, but also over those portions of the country in which no such connection can be traced.

III.—The preventive measures adopted and the results of the epidemic.

IV.—General conclusions both as regards the mode in which the disease has spread, and the practical measures which should be adopted in any future outbreak.

SECTION I.

THE HURDWAR FAIR OF 1867.

7. From the writings of various officers who have visited the spot between the years 1796 and 1867, the following particulars regarding Hurdwar have been gleaned :—
- Description of Hurdwar.

Hurdwar, or more properly "Haridwara," the gate of Vishnu, is an inconsiderable Native town in the district of Saharunpore, and distant about 40 miles due east of that station, in Lat. $29^{\circ} 57' N$, Long. $78^{\circ} 14' E$. according to Thornton. It is situated on the southern slope of the Siwalik Range, at the mouth of the gorge through which the Ganges escapes from its cradle in the Himalaya to the plains of Hindustan. It is, therefore, sometimes called "Gungadwara," or the gate of the Ganges. Its elevation above the sea level is a little over 1,000 feet. In former times the river at Hurdwar was divided into three channels, but since the construction of the Ganges Canal the water has been directed into two, one of which is the main stream, and on its western bank the town is situated. What was once a shallow, fordable, sluggish stream is now, therefore, a deep, broad, and rapid river, and during the rainy season becomes a rushing torrent. The water is exceedingly cold, as it is largely derived from the melting of the snow in the mountains. The valley through which the river flows runs up in a N. E. direction, towards the foot of the main Himalayan chain, which is full 13 miles distant from Hurdwar. This valley is described as being intensely malarious, abounding in dense jungle and swamp. Even in the neighbourhood of Hurdwar itself the same condition prevails, but in a lesser degree. The surrounding country is low relatively to the bed of the river, so that the soil is very damp, and, being covered with stunted verdure, rapidly generates malaria.

8. The sacred river here first enters the plains, and, as might be supposed, the locality is one held in peculiar sanctity by Hindus. From time immemorial an annual pilgrimage to this spot has been enjoined from all parts of Hindustan for the purposes of ablution in the sacred waters. "The bathing commences in the month of *Chaitra*, when the sun is in *Minu* or *Pisces*, and concludes on the day he enters *Mesha* or *Aries*, agreeably to the solar computation of the *Hindus*, and corresponding with the 10th April, on which day the sun has actually advanced $20\frac{1}{2}^{\circ}$ in that sign. Every twelfth year is celebrated with greater rejoicings, and is called the *Cumbha Mela*, so denoted from the planet *Jupiter* being then in the sign of *Aquarius*." "A pilgrimage at these duodecennial periods is considered the most fortunate and efficacious." Both Colonel Hardwicke and Captain Raper were fortunate enough, in 1796 and 1808 respectively, to be present at these periods, and to them we owe much of the early history of *Hurdwar*. The latter states that "the fair is totally unconnected with the ostensible purport

of the meeting, but the Hindus never lose sight of their worldly interests, and a *mela* is a necessary consequence of their religious convocations; numbers are led hither as much from commercial as holy motives, and independent of the merchandise brought by the merchants from the *Punjab, Cabul, Cashmere*, and other places, most of the pilgrims supply themselves with some articles, the produce or manufacture of the country whence they came, for which they are certain of an advantageous sale. Through this channel the principal cities in the *Duaba, Delhi, and Lucknow* are supplied with the productions of the western and northern countries. To facilitate these commercial transactions, which are carried on to an immense extent, agents are deputed from the most respectable bankers, who exchange money and grant bills on all parts of India to any amount.

9. In former times, when this portion of country was under the sway of the Mahrattas, these duodecennial gatherings were marked by much violence and bloodshed, owing to the contentions of the several sects of *fakirs*, who congregated in vast numbers and fought for the ruling power. The *gosains*, being the more powerful sect, gained and held the ascendancy through many succeeding ages, and levied a poll-tax and other imposts on the pilgrims independently of their Mahratta rulers. Since Hurdwar, however, became British territory, this arbitrary system has been abolished, "and all castes and descriptions of people have free ingress and egress without impost or molestation." In the year 1760 the superiority was contested by the *bairagis*, the next most powerful sect to the *gosains*, and after a long and bloody battle, victory declared itself on the side of the latter. It is stated that about 18,000 of the *bairagis* fell on that occasion, and that for many years afterwards the sect were debarred altogether from the privilege of attending the *mela*. Subsequently, in 1796, owing to an outrage by the *gosains* on an old Sikh priest, *Oodasee*, who came to the fair, with the avowed object of bathing, Rajah Sahib Singh, the Sikh Chief, with 10,000 horsemen, attacked the offending parties, and having slaughtered a great number, drove the remainder into the river, where many were drowned, and the survivors, having gained the other side, sought safety in flight to the hills. This is the last occasion on record of such scenes of bloodshed. Now, though the concourse of pilgrims is doubtless vastly in excess of what it was in former times, the *Cumbha Mela* is marked throughout by harmony and order—arms are forbidden in the fair, and a large force of Military and Police are in attendance, so that tranquillity is readily maintained. Accidents are still, however, not uncommon, especially on the *Purbi* or last day of the fair, when vast crowds collect at the bathing ghât, and some of the pilgrims are frequently either crushed or are carried away by the stream. The bathing ghât is termed *hari-ka-paira* or the feet of Vishnu, and to it vast multitudes throng on the great bathing day, as priority of ablution is believed to exercise an additional influence in purgation from sin. The last great loss of life occurred in 1819, when it is stated that upwards of 400 pilgrims were either crushed to death or drowned in the river. This led to the construction by the British Government of an ample stone ghât leading down to the river by a flight of sixty steps. Here men and women, old and young, may be seen bathing indiscriminately together and

unassisted; but the aged and pious are generally supported between two Brahmins, who receive certain fees for the service rendered.' The ceremony consists in simple immersion, but widows undergo the operation of tonsure afterwards, the hair being strewn on the ground, under the superstitious belief that a good or evil omen is portended by the animal which first treads on it. The elephant is regarded in this particular as the king of beasts, wealth and happiness being supposed to follow his royal foot-prints.

10. Several causes conspired to make the fair of 1867 one of unusual numerical magnitude. In addition to its being a *Cumbha Mela*, a belief had gained ground in all parts of the Peninsula that the sacred character of the Ganges was being interfered with, and that ere the time of another gathering could arrive, it would be entirely destroyed. This idea seems to have originated, suggests Mr. Robertson, the Magistrate of Saharunpore, on the completion of the Ganges Canal, which was expected to rob the sacred stream year by year of an increasing quantity of water, and so eventually to dry up its bed altogether; but, as has been before stated, the effect has been rather the reverse, for the river at Hurdwar is now comparatively broad and deep, and its permanency established more surely than ever. Mr. Robertson suggests another view of the case which, it may be hoped, is nearer the truth. "It declares in fact that the Brahmins admit that advancing intelligence is undermining both their influence and that of the Ganges, and that they are prepared to meet this change in public opinion as a circumstance long foretold." Whatever may have been the causes at work, there is no doubt that the desire to make the pilgrimage to the sacred river was more than ordinarily widespread, and the extension of railway communication afforded facilities for the journey which in no former *Cumbha Mela* had ever existed.

11. To provide for the safety and proper management of so vast a crowd of people as was expected, more than ordinary preparations had been made. Considerable sums of money had been expended on terraces, in extension of the sacred ghât, in filling up holes in the river opposite to it, in reducing the depth of channel, and in constructing ten bridges to facilitate the passage of the bathers. The arrangements, in the language of the Magistrate of Saharunpore, "were subordinate to the principle that the crowd was invariably to move in one direction, so that no opposing bodies of men could under any condition meet each other; that no carts, elephants, or horses were allowed to enter the town of Hurdwar during the great bathing day; that the people, wherever encamped, were forced to submit to the sanitary rules enforced by the police, and that the processions of the different sects of *fakirs*, instead of traversing the town of Hurdwar, should proceed to the bathing place by the island of Roree, whence, after crossing one of the bridges and bathing, they recrossed at a lower bridge to Roree and rejoined their elephants." In carrying out these plans, and in every thing calculated to add to the convenience and comfort of the multitude, the officials, civil, engineer and police officers, all vied with one another, and with such success that with one slight exception no accident occurred.

12. Nor were the sanitary arrangements prepared with less activity.

Sanitary arrangements. Dr. Cutcliffe, to whose charge they had been specially entrusted, had been early on the ground, and had set himself to his task with great zeal. The conservancy system was based on the principle that dry earth as a deodorizer should, as far as practicable, be everywhere adopted, and that all filth should be either buried in trenches or burnt in furnaces specially erected for the purpose. Latrines were provided in convenient situations; measures being at the same time taken to prevent any trench for the reception of sewage being dug on ground which could form any part of a water-course. The latrines generally consisted only of screened trenches, two being dug at a time with a space of two feet between; the earth which was thrown up in digging the one being stored for future use on the edge of the other. In some situations, where the soil consisted of sand and boulders, the trench system could not be worked, and from these the sewage having been first mixed with earth was carried by donkeys or mules to the furnaces to be burned. It will be necessary to recur to these arrangements in discussing the sickness which afterwards occurred. As regards the general sanitary management of the encampment the ground was cleaned and cleared, streets were marked out so as to guard against overcrowding and secure ventilation, orders were issued to ensure the proper disposal of the dead and prevent their being thrown into the river, and precautions were taken to prevent, as far as possible, the introduction of any infectious diseases.

13. Attention was directed towards maintaining the purity of the river, and for this purpose patrols of police were posted upwards from Hurdwar to Rikhikés, where it emerges from the mountains. **Supply of food and water.** River water was mainly drunk by the devotees, but some of the hospitals were supplied with well water, previously filtered. Mahomedans, as a rule, drank well water. Supplies, we are told, were abundant and good, as the Magistrate of Saharunpore had, for some time previous, made special arrangements to have large quantities of the best grain concentrated at Hurdwar pending the arrival of the pilgrims. The food exposed for sale, moreover, was subjected to frequent and careful examination, and any found to be unwholesome was at once seized and destroyed. Despite these precautions, however, Mr. Robertson states that, as many of the poorer pilgrims brought food all ready cooked from their homes, much that was unwholesome found its way into the fair. These poorer pilgrims do not, or perhaps cannot, purchase their food at the fairs, and are dependent solely on their home supplies, so that all efforts in the direction of a good Commissariat are thrown away upon them. This is consequently the class in which disease most generally originates.

14. To provide for the wants of the sick hospitals were constructed in various parts of the encampment, and were so placed as not to intercept the prevailing winds. **Hospitals provided.** Six hospitals and two dispensaries were thus organised, and were taken charge of by the Civil Surgeons of Dehra, Bijnour, and Saharunpore; the latter officer, Dr. Cutcliffe, performing also the duties of Sanitary Officer, as already mentioned. Besides these, two hospitals for infectious and contagious diseases

were established, the one situated between Myapoor and Jowalapoor, the other in the Dehra section of the encampment. They were isolated from all other buildings, and were guarded by a cordon of police. All the hospitals were uniformly constructed of thatch and matting work, supported on strong poles and logs, and in no case were they intended to accommodate more than 30 patients in each. When two or more such buildings were required together, they were so disposed as to allow free ventilation on all sides. Arrangements were also made to provide additional accommodation, in the event of its being required by excess of sickness amongst the pilgrims. Each patient had upwards of 65 superficial feet of space, and no more than two rows of beds were allowed between opposite walls. Accommodation was screened off for females to the extent required. For the conduct of the subordinate duties of these hospitals the adjacent districts had been indented upon for Native doctors and compounders, and a staff of vaccinators was also furnished by the Kumaon and Meerut divisions. Doolies were distributed here and there for the conveyance of the sick to the hospitals, and every precaution was taken that such as were employed in the transport of contagious cases should not again be issued for general use.

15. About the middle of March many *fakirs* and shop-keepers, anxious to secure good positions, began to arrive. Pilgrims also from distant parts arrived early, performed their ablutions, and again departed, dreading, most probably, the crowding and turmoil which invariably attend the after stages of the fair. A constant succession of arrivals and departures was thus kept up until about the end of March, when the multitudes showed less and less disposition to disperse as the great bathing day approached. During the first week of April and on subsequent days up to the 12th, dense masses of pilgrims poured in from all quarters, and encamped in every direction for miles on both sides of the river. The arrangements on the last day, the *Purbi*, which were planned by Mr. Robertson, and which are fully detailed in his report, were admirably carried out, and were completely successful in preventing accident, though it appears that they did not entirely meet the approval of the more wealthy pilgrims and of the excited *fakirs*. Slight concessions were granted on both sides, however, and all passed off well. Noon of the 12th April was the auspicious hour and day for ablution, after which the stream of pilgrims flowed steadily from Hurdwar.

16. As to the numbers actually present at this great gathering, opinions are divided. It was doubtless the most numerously attended fair on record, owing perhaps chiefly to the belief that had got abroad as to its being the last. Dr. Cutcliffe adopted a way of calculating the numbers, which no doubt gives a pretty truthful approximation. He selected three portions of the encampment, a thinly populated, a moderately populated, and a densely populated portion. Accurately measuring the area of each of these, he took a census on the night of the 9th April. Taking the result, the sum of the three, as his basis of calculation, and computing the total area of the encampment to be 22 square miles, he found that the number actually present would amount to 2,855,966. This may be taken as rather below than above the truth, as in 1796 Hardwicke

estimated the number at 2,500,000. Raper also, at the *Cumbha Mela* of 1808, estimated that 2,000,000 would be rather under than over the mark. In those days there were means of arriving at the truth which we do not now possess. For instance, Hardwicke, in his "Narrative of a journey to Sirinuggur," speaking of the numbers as 2,500,000, states, "this estimation may appear enormous, and it, therefore, becomes necessary to give some account of the grounds on which it was formed. Small sums are paid by all at the different watering places, and the collectors at each of these, in rendering their accounts to the *mohunts*, who regulate the police, are obliged to form as exact a register as a place of so much bustle will admit of. From the principal of these offices the number of the multitude is found out probably within a few thousands. The *gosains*, on whose information the calculation was formed, had access to these records, and the result, as delivered above, was thought more likely to be under than over the mark." Dr. Cutcliffe's census may therefore be regarded as nearly correct, and as fairly representing the number actually on the ground on the night of the 9th April. If we include those, however, who, for some weeks previous to the 12th April, paid hurried visits to the fair, the total number will more correctly be represented by 3,000,000.

17. The meteorological phenomena which occurred during the fair are a matter of very great importance. From Dr. Cutcliffe's abstract, it would appear that the daily mean temperature during the week ending on the 14th April was 76°. The weather for some time previous was unsettled, but towards the end of March some rain fell, and it continued fair to the 11th April. It would appear that there are great extremes of heat and cold in the early spring months at Hurdwar. During the day the heat is very powerful, partly owing to the configuration of the ground causing great radiation. The lower strata of air are thereby much overheated. At night the cold air from the snow-capped mountains rushes down the gorge through which the river flows. This wind is 'locally known as the *Dadoo*,' and often blows with great force. Its direction is N. E., and it blows from 9 P. M. to 10 A. M., an upward current from the plains supplying its place during the day. Storms are very frequent in this locality. The 11th of April was a sultry cloudy day, and in the afternoon a storm, accompanied by heavy rain, thunder and lightning, came up from the west. The effect of this, of course, was a sudden and marked decrease of temperature, which was simultaneously noted by Dr. Murray Thomson at Roorkee. It rained heavily all night and drenched the whole encampment, so that most of the pilgrims were without dry clothing, and remained in this state all the following day. Rain continued to fall during the 12th, the great bathing day, and the pilgrims, in addition to the drenching which they experienced, drank freely of the river water, which had been polluted and rendered muddy by the heavy rain and the bathing operations of the vast multitude.

18. Annexed is an abstract of the meteorological observations made at Roorkee during the month of April 1867, by Dr. Murray Thomson, the Meteorological Reporter of the North Western Provinces. These observations may be considered appli-

Meteorological phenomena
at Hurdwar.

Observations at Roorkee.

Agological Report, North-Western Provinces.

STATION.				THERMOMETER.										RAIN.			WIND.											Force Average number of miles per day.		
With Latitude and Longitude and Height above sea level in feet.				IN SHADE.								SIX INCHES BELOW GROUND.		Number of rainy days.	Maximum fall and date.	Total fall.	Ozone.	Number of days it blew in certain directions.												
Latitude.	Longitude.	Height.	Feet in air.	Minimum and date.	Maximum and date.	Mean.	Minimum and date.	Mean daily range.	Monthly mean temperature.	10 a. m.	4 p. m.	Number of rainy days.	Maximum fall and date.					Total fall.	Ozone.	N.	N. E.	E.	S. E.	S.	S. W.	W.	N. W.		Calm.	Hour.
				12th	6th		13th									12th														
Roorkee	29°52'	77°57'	880	73.7	74.4	66	59.7	29	80	78	86	12	52	52	1.5	1	3	0	0	0	6	10	8	2	4 p. m.	59.9				

Chart showing the Barometric range in April 1867.

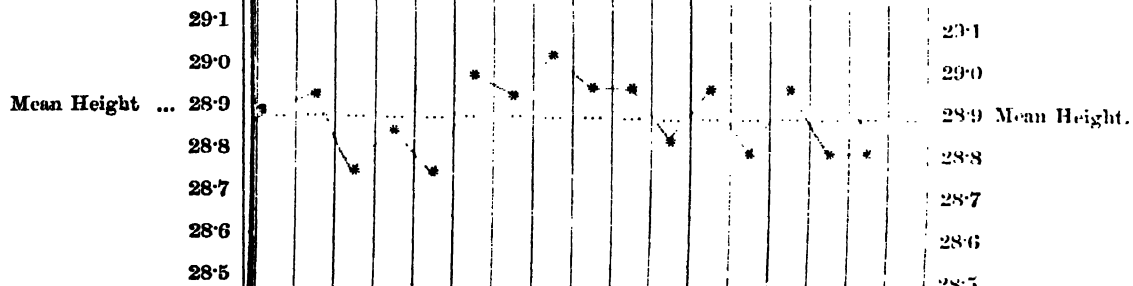
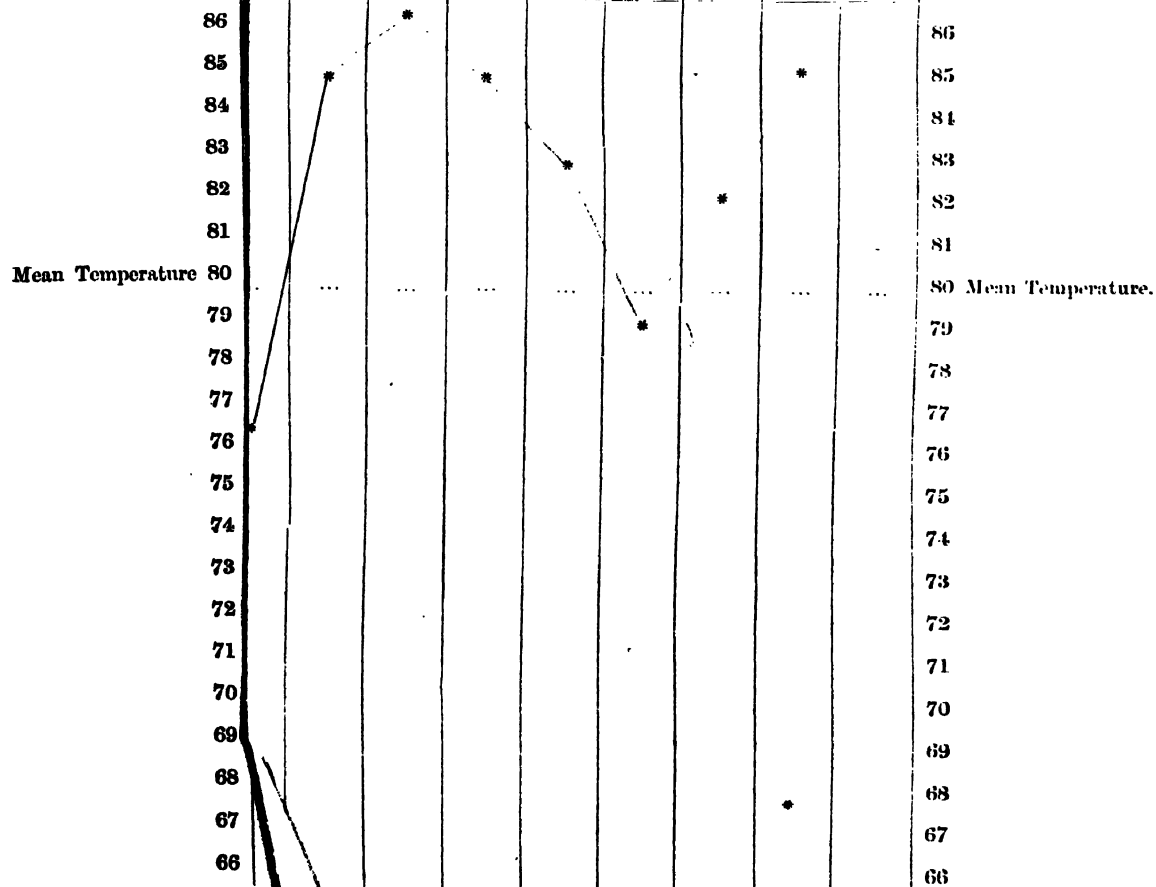


Chart showing the mean Temperature of April 1867.



cable to Hurdwar, the distance between the two stations being only 17 miles. At Roorkee the month of April was marked by small barometric pressure, the maximum (29·058) being attained on the 18th, and the minimum (28·713) on the 7th; the monthly mean of four daily observations being 28·884. The humidity of the atmosphere, as indicated by the great difference between the wet and dry bulbs, was very small. The average of the 4 p. m. observations shows a difference of no less than 26°. The temperature was not on the whole high during the month, but was marked by great alternations. The point to be principally noted, however, is the great and sudden depression of temperature which followed the storm on the evening of the 11th April. This sudden depression succeeding the close and sultry condition of the atmosphere, as observed by Dr. Cutcliffe, must have exercised a very deleterious effect on the mass of shivering devotees. Rain fell on twelve days during the month; but except on the night of the 11th the quantity appears to have been inappreciable. The winds in April were variable, though those having a westerly direction prevailed. The wind was due W. in 15 out of 60 observations, and in 19 more it had a north-west or south-west direction. Sixteen observations are noticed as calm. Summarising these results, the month of April would seem to have been characterised by excessive dryness of the atmosphere, low barometric pressure, great and sudden alternations of temperature, westerly breezes and absence of ozone, and that these conditions existed prior to, and concurrently with, the fair.

19. The health of the camp, considering the enormous multitude present, appears, up to the 12th April, to have been excellent. The medical returns of in-door and out door patients treated, during the whole period of the fair, at the general hospitals, show the total number to have been only 1,367, 823 being out-door and 544 in-door patients. If the lowest estimate of the number of pilgrims at 2,500,000 be taken, it results that only about 1 in 2,000 were sick during the fortnight of their stay at the fair. This seems almost incredible, but the statements of the several medical officers agree as to the remarkable immunity of the encampment from disease. It may be said that many cases of sickness might have occurred without their having been brought to the notice of the medical officers, but the police were ever on the alert against cases of serious illness; and their attention to this important matter is the subject of very favorable comment by most of the officers present during the fair. As may be inferred from the meteorological and topographical peculiarities of Hurdwar already noted, ordinary intermittent fever or ague was the most common disorder amongst the pilgrims, about 17 per cent. of the total treated being from this cause. Intermittent and remittent forms of fever caused 6 deaths out of the very small total of 16 fatal cases which occurred. But bowel affections are those which have a special importance. Taken collectively they show a total sick roll of only 308, or 21·9 per cent. of the whole (diarrhœa 101, dysentery 79, colic 64, dyspepsia 64), a marvellously small number when we consider the many conditions that were present predisposing to such affections. Towards the close of March a few cases (4) of severe diarrhœa were sent to hospital,

where they speedily recovered. Only 4 deaths from diarrhoea and dysentery occurred during the period under review. There is a long list of other diseases given in the return, but they do not call for special remark. A few cases of small-pox occurred and were speedily isolated, so that the disease did not gain a footing amongst the pilgrims. Of accidental deaths there were 5, of which 2 were caused by lightning.

20. It is of great importance to fix the precise date on which the first case of cholera occurred at the fair. On this point Dr. Cutcliffe reports—"Dr. Richardson states in his report that no case of cholera or of small-pox occurred in the Deyrah section up to the 14th, and Dr. Gardener's returns show a similar absence of either of these diseases up to the same date. Dr. Kendall, in medical charge of a detachment of the 14th Bengal Cavalry stationed below Kunkhul states that a case of *sporadic* cholera occurred in a grass-cutter of his regiment on the night of the 9th April. Under treatment this man speedily recovered, and no other case occurred in the Regiment at Hurdwar. Of all the hospitals and dispensaries at Hurdwar the medical returns show an absence of the disease up to the 13th April. On that day 8 cases of cholera were sent to hospital. Up to the 15th there were 19 admissions from this disease."

21. So far then as was ascertained only one case of cholera occurred at the fair before the 13th. By that time the rapid dispersion of the pilgrims. rush of pilgrims from Hurdwar was at its height. From noon on the 12th, which was the auspicious hour for bathing, the vast multitude had begun to depart. The rapidity with which the crowd dispersed is reported to have been inconceivable, and the fact has an important bearing in relation to succeeding events. Dr. Richardson reports that on the afternoon of the 13th, there were not 300 people remaining in the Dehra section. By the same time the Bijour section was empty; and on the morning of the 15th the entire ground, so lately covered by the encampments, was a bare plain again.

22. The rapid dispersion of the pilgrims had much to say to the fact that cholera, although it had broken out in the camp, found very few victims there. The disease does not appear to have declared itself as an epidemic until the great object of the pilgrims had been accomplished and the vast multitude was already moving off to their homes. It is not, therefore, to be wondered at that only 19 cases of cholera were actually seen and treated at Hurdwar.

23. Having now briefly narrated the main facts connected with the sanitary history of the Hurdwar Fair of 1867, the Cause of the appearance of cholera at Hurdwar. very important question arises—To what cause is the appearance of cholera among the pilgrims to be attributed? Was it generated within the camp by filth or any defect in the sanitary arrangements? Was it produced solely by atmospheric phenomena and the other local circumstances under which the vast multitude were placed? Or was it the result of some specific germ of disease which was imported from without and germinated

because it found the conditions necessary for its spread? These are questions of very great difficulty,—questions which involve the whole origin and development of the disease,—questions to reply to which with accuracy precise data are unfortunately wanting; but although they involve many intricate points, although they may not admit of altogether satisfactory replies, they must not be avoided. It is of the utmost importance that the facts, so far as they have been reliably ascertained, should be carefully examined, and that an unbiased endeavour should be made to learn whether our knowledge of the origin and spread of cholera has been in any degree advanced, or whether these questions, so largely connected with the welfare of the human species, remain as mysterious as ever.

24. The three questions which have thus to be discussed appear to embrace the only three modes in which the disease could have appeared, and each must therefore be separately examined. In the first place then,—Did the disease arise from the filthy condition of the camp or from any defect in the sanitary arrangements? To this question there is not much difficulty in replying. The testimony of all concerned is to the effect that the encampment was singularly clean, that the arrangements for disposal of all filth were actively and successfully carried out. As far as the senses could testify, there was nothing which could offend either sight or smell. In this respect the fair of 1867 presented a marked contrast to any previous gathering which had ever been held at Hurdwar. In former years it was hardly possible to move in any direction on account of the filth which lay about in every quarter, and yet while cholera appeared in 1867, the fairs of previous years had often and indeed generally been free of any outbreak of the disease.

25. Vague traditions exist to the effect that cholera broke out in the fairs of 1819 and 1829, but no particulars are known. The epidemic of 1783 is thus referred to in Dr. Jameson's report on the cholera of 1817. "Hurdwar," he writes, "is held very sacred by the Hindoos, and every year, at the full moon in April, an immense concourse of people assembles near it for the purpose of ablution in the holy stream. It so happened that the year 1783 was one of the twelfth years deemed peculiarly propitious, and that the body of pilgrims then collected was unusually great, amounting, it is believed, to between one and two millions. It is the custom of the pilgrims to repair to the bed of the river, where they pass the night with little, if any shelter; many persons being crowded together under the cover of a single blanket thrown out as an awning. The temperature is very variable, the days being hot, and the nights cold with heavy dews and sudden chilly blasts from the clefts in the mountains. On the present occasion these causes were sufficient to generate the cholera which broke out soon after the commencement of the ceremonies and raged with such fury that in less than eight days it is said to have cut off above 20,000 victims; but so confined was its influence that it did not reach the village of Jowalapore, only seven miles distant, and ceased immediately on the concourse breaking up on the last day of the festival."

26. The sanitary and medical histories of previous Hurdwar *melas* are unfortunately very incomplete. Regarding the earlier years there is no reliable information, but it is not necessary to go very far back in order to collect evidence sufficient to decide the point in question. In the year 1857, an outbreak of considerable severity occurred at the fair, but with this exception the disease appears to have been unknown between the years 1854 and 1868. Of fourteen fairs accordingly, thirteen passed off without any epidemic, while the fifteenth and only one in which any attention was paid to sanitary measures was attended with the commencement of the most wide-spread and fatal outburst over Upper India of which there is any record. It may therefore be stated with perfect confidence that the appearance of cholera at the Hurdwar Fair of 1867, was not *generated* by any insanitary conditions.

27. It may not be out of place to consider whether filth alone is sufficient to engender the disease. On this point the evidence is chiefly negative, but it is still valuable. Successive fairs have been held at Hurdwar, where the whole space occupied by the pilgrims was as unclean as it well could be, and yet no case of the disease occurred. It may be said that the number of persons present was not so large as in 1867, and that therefore their filthy habits were of less importance; but although the last fair was of extraordinary size, the ordinary assemblage every year is immense, and if want of sanitary arrangements can by itself produce cholera, the collection of many hundreds of thousands of human beings left entirely to follow their usual filthy habits ought certainly to have induced the disease. The same may be said of the numerous other though smaller assemblages which annually take place over Northern India, and in which the outburst of cholera has been very rare and altogether exceptional.

28. There are towns and villages, moreover, scattered over the whole length and breadth of the Upper Provinces, which, if filth is the parent of cholera, ought never to be free from the disease, and which yet, within the memory of the oldest resident, have enjoyed a remarkable immunity from its ravages broken only at long intervals of many years. The conclusion to which all the facts, which we possess in relation to the connection between cholera and filth, point is, that while a filthy state of things, as a general rule, singularly favors the spread of the disease, it is *per se* altogether incapable of producing it.

29. The fact that the sanitary measures which have been adopted at Conjeveram and other places of pilgrimage both in Madras and in the southern and central parts of India, have been attended with marked success, and that assemblages which rarely passed off without a serious epidemic have in consequence become comparatively free of the disease, although apparently opposed to the view just enunciated, is not so in reality. In these parts of the country, a new element has to be taken into consideration; in them the disease is endemic; from them the specific cause, whatever that may be, which engenders cholera, is never absent, and if it be true, as is now generally believed by the highest authorities,

that the dejecta of those suffering from the disease contain the poison by which it is propagated, a filthy condition of any place occupied by large masses of human beings must in these parts be almost synonymous with the presence of the poison under circumstances which are most favorable to its rapid and extensive development.

● 30. But if the disease was not generated by filth, was its appearance due to any peculiar atmospheric phenomena, aided by the circumstances under which the pilgrims were placed? The condition of the atmosphere, as detailed in a preceding paragraph, was certainly remarkable and well worthy of notice, but there is perhaps no subject on which precise information in India is so much required as meteorology. There is nothing to show that the variations in barometric pressure or temperature or the fall of rain were very different from what may have occurred in a series of preceding years. There are no corresponding observations made in any other outbreak of the disease with which they can be compared, and the mere occurrence of atmospheric phenomena, however singularly contemporaneous with the commencement of the epidemic, far from warrant any deductions being drawn from the coincidence.

31. Even in England, where meteorological observations have been taken on a scale and with a care which have as yet been unknown in India so far as our knowledge yet goes, nothing appears more hopeless than to establish any connection between epidemic cholera and known states of the atmosphere. The results which Mr. Glaisher has obtained serve only to add to the difficulties of the question. Of the several epidemics of the disease which have visited London, the main feature in connection with this important point, is the very remarkable contrast which they exhibit. Writing of the epidemic of 1866, Mr. Radcliffe, whose account of it will be found appended to the ninth report of the medical officer of the Privy Council, observes:—
 “ The visitations of 1832, 1848, and 1854 were coincident with great atmospheric pressure, high temperature (except in 1832), small diurnal range (owing mostly to high night temperature), deficiency of rain, very little wind (and comparative stagnation of atmosphere and prevalent mist), a deficiency of electricity (indicated by the few electrical disturbances), and in 1854, the presence of a remarkable blue mist which prevailed night and day. During the three months of principal prevalence of the recent outbreak in the metropolis (July, August, and September), the atmospheric pressure was remarkably low; from the 26th July to the end of the quarter the barometer, reading at the height of 160 feet, never reached the point of 30 inches, a most rare occurrence, Mr. Glaisher writes. The temperature of the air was low night and day, except in September, when the nights were warm. The daily range of temperature was small, chiefly owing to the low day temperature, particularly in August, and to a somewhat less degree in September, but the range in September was still further lessened by the high temperature of its nights. There was an abundance of rain, and the air was in almost constant motion,

frequently blowing a much heavier gale than is usual at this season of the year. 'Nearly all these circumstances,' observes Mr. Glaisher, 'are directly opposite to those mentioned above as being present at the previous visitations of cholera, and have probably aided in checking its wider extension.' " Mr. Radcliffe, in opposition to Mr. Glaisher, maintains that certain excessive variations of temperature attended the early sudden and large development of the outbreak, but he remarks "that temperature and meteorological changes played a very subsidiary part in the great development of the epidemic in the east districts." The late Dr. Baly, in like manner, repudiated the constant connection between certain atmospheric phenomena and cholera, though he admitted that the temperature, as a rule, "does in some way or other exert an influence over the degree of prevalence of cholera, and generally determines the periods of its greater or less intensity." He believed, however, that it is neither necessary nor constant in its operation.

32. In regard to the meteorological phenomena which occurred at Hurdwar, the two facts of the greatest importance appear to be,—first, the heavy rain of the 11th and 12th; and, secondly, the rapid and marked diminution in temperature. In the Upper Provinces epidemics of cholera most frequently occur in the rainy months, and there can be no question that the pilgrims, many of whom were scantily clad, when wet and cold were more susceptible to any causes of disease than they otherwise would have been. It is worthy of notice that in the only particulars which have been given regarding the great fair of 1855, it is specially stated that "there were alternations in weather," and yet no epidemic occurred.

33. In discussing the probability of the disease having been imported into Hurdwar during the fair, it will be necessary to review shortly the various facts with reference to the appearance of the disease in the Upper Provinces during the latter part of 1866, and the three months of 1867 which preceded the gathering. The chief fact regarding the former period is that an epidemic of the disease broke out at Agra during the Durbar held by His Excellency the Viceroy, and that it became advisable to break up the camp earlier than had been intended in order to prevent the spread of the pestilence. In connection with this epidemic there are some facts of more than ordinary interest. For some months previously the disease had been threatening to become epidemic in some of the Native States of Rajpootana. The camp of the Agent of the Governor General, in marching up from Aboo in the middle of September, had to take a circuitous route through the Jodhpoor territory in order to avoid the affected localities. It arrived at Halena, a village in the Bhurtpore district, on the 27th of October, and halted the following day, Sunday, continuing the march on the 29th towards Agra. Two cases, the first which occurred, proved fatal on the morning of the 29th. These were carried on from the encampment at Halena. The camp then marched in two divisions towards Agra *via* Futtehpore Sikri. At the village of Buronda, 10 miles from Agra, where it arrived on the 2nd November, the main portion of the camp halted, the

Agent, Colonel Eden, taking only his personal staff and office establishment to cantonments on the morning of the 3rd November. Agra was at this time quite free from cholera, but about noon of the 4th November the disease appeared in the Agent's camp, and a few hours afterwards reappeared in a virulent form in the main encampment at Buronda. Twenty-one cases and seven deaths occurred in little more than twenty-four hours after this outburst at Buronda. The disease subsequently gained a footing amongst the European and Native troops during the Viceroy's Durbar, and also in the city of Agra. Among the European troops there were 12 cases and 7 deaths. Among the Native population generally, between the 4th and 26th November, 114 were ascertained to have occurred, and of these 64 proved fatal.

34. The disease continued to follow some of the regiments on the march to their various destinations. Notably the 36th Native Infantry, *en-route* to Meerut, suffered after leaving Agra, 7 cases and 5 deaths having occurred between Ghazeeabad and Meerut. Dr. Bryden's Tables show that among Native troops in camp and on the march in the Agra and Meerut districts during the months of November and December 1866, 28 cases of cholera occurred in all, of which 19 were fatal. In December 1866 there were 2 fatal cases in the 2nd Battalion Rifle Brigade at Meerut; also one in the Royal Artillery at Delhi, and one in the Sappers and Miners at Roorkee, both of which recovered. In the jail population of the Upper Provinces no case occurred in these months.

35. As regards the general population, no reliable data are to be had beyond a few isolated facts. Of these one has already been noted regarding Agra; another of great importance is, that on the 4th and 23rd December 2 fatal cases of cholera occurred at Roorkee, a station in the immediate vicinity of Hurdwar. In the opening paragraph of his report on the epidemic of cholera, which proved so severe and fatal among European troops at Meerut, the Deputy Inspector General of Hospitals Her Majesty's British Forces remarks that at the Goormooktesur Fair, held 28 miles from Meerut, in the end of 1866, cases of cholera were said to have occurred, but to what extent is not known. The mortuary returns of the Punjab show that cholera prevailed to a considerable extent in the Delhi district during the month of December. Fifty-eight fatal cases are noted as having occurred there, and the belief was current that the disease had been imported by the troops and people returning from the Agra Durbar.

36. The statistics of 1866 show that during the three first months of the year not a single case occurred among the troops whether European or Native, nor was there any among the prisoners in the Upper Provinces, with the single exception of the central jail at Allahabad, where, between the 22nd March and 4th April, 27 cases occurred and 4 deaths. There is no traceable connection between this epidemic and the outburst of the disease at Hurdwar.

37. The occurrence of the disease in the Terai Pergunnahs, which skirt the foot of the Nepal and Kemaon Himalaya and lie not far distant from Hurdwar, is a fact of great importance. The opinion of the Superintendent of the district is very decided. He writes—"It appears almost certain that this attack of cholera originated with the pilgrims visiting the Hurdwar Fair. They took it with them to Hurdwar, it having been prevalent all along the borders of Nepal during the cold season, and from Hurdwar they brought it back, and on their return, it spread on all sides." Although opinions may differ as to the correctness of this view of the case, it is of great importance to observe that numerous cases occurred in pilgrims proceeding westward to Hurdwar, prior to the general outbreak there. Cases are specially noted as having occurred at Bazpoor, on the road to, and 50 miles distant from, Hurdwar, on the 5th of April. There were 19 deaths in that town from cholera between the 5th and 12th April inclusive.

38. It is also worthy of notice that the disease which is thus believed to have spread westward towards Hurdwar is also supposed to have spread to the east. Sir Jung Bahadoor marched up the Nepal Frontier early in January, with a camp, of about 5,000 men. During his long march of 200 miles from Singowlie there was not the slightest appearance of sickness. On arrival at Barumdeo on the left bank of the Gogra where it escapes from the hills, Sir Jung Bahadoor was informed of the prevalence of cholera on the other side of the river, to the west of Barumdeo, and he was advised to prevent, as far as possible, communication with the affected districts. This seems to have been impracticable, however, his mission being the marriage of his son to the daughter of the Rajah of Kashipore. Free intercommunication was established, and in the course of a few days cholera broke out in his camp. Mr. F. Read, Conservator of Forests in Oudh, who furnished this information, further remarks that the disease appears to have been travelling due east, and that it had caused considerable anxiety at Ramnuggur, Kaladongee, and Huldwanee for some time previously. There is no record of cholera to the east of Barumdeo prior to the first week in January. Sir Jung Bahadoor, finding that the disease had fairly gained a footing amongst his men, returned by forced marches, almost in the same track by which he had come, but the disease did not abate, and in the course of less than a fortnight it is stated that about 650 of his followers died.

39. Assuming for the present that cholera is capable of being imported among a healthy community by persons suffering from the disease, there is nothing improbable in the statement that pilgrims from the Terai, who suffered from the disease on their march to the neighbouring fair, may have brought the germs of the outbreak with them. There is also another source from which the importation may have taken place. The Agency Surgeon at Bhurtpore reports that cholera assumed an epidemic form in that district on the 6th April. He states also, that it hung about in the neighbourhood of Bhurtpore all the cold weather, and that "the

district was never wholly rid of the disease from last season" (September, October and November 1866). Cases of what seemed choleraic diarrhoea were very common in December, January and February. "In February a case of cholera is returned from Pahari, and two cases occurred at Ochea in March. It will be remembered that the Maharajah of Bhutpore visited Hurdwar with a large retinue, and that he left his territory just about the time when cholera began to extend. The disease also appears to have prevailed epidemically at Bindrabun near Muttra during March, but I can find no positive information as to its extent."

40. Looking at all the facts which have been stated, to what cause is the outburst of cholera at Hurdwar in 1867 to be properly ascribed? It has been shown that filth, or the want of proper conservancy arrangements exists, and has existed for ages in many cities of the Upper Provinces, and yet that cholera has been a rare visitor; that in thirteen out of fourteen fairs in which sanitation was altogether neglected, cholera was unknown. That atmospheric phenomena produced the disease, is a theory which may hereafter be proved to be correct, but as yet it rests on no basis of fact. In the present state of the question such an assertion is simply equivalent to stating that the origin of the disease is inexplicable. But if these two opinions be set aside as untenable, there remains but one other. If the disease was not generated at the fair, it must have been brought from elsewhere. This idea is quite consistent with the facts; it is quite consistent with the analogy of other diseases, such as small-pox, regarding the propagation of which we have more precise information. Considering that the pilgrims flocked in by hundreds and thousands from all parts of India, it is not difficult to understand the danger lest disease should be imported, and when it is known that cholera had been prevalent in a neighbouring district, the danger was indefinitely increased. Even had it been impossible to discover the probable source of importation the argument would not have become invalid, but there is the direct testimony of the Superintendent of the Terai that pilgrims going to Hurdwar from his district had the disease among them, and that several died on the way. The general question of importation, and the difficulties which beset this, as well as any other theories which have been advanced to account for the spread of cholera, will be more conveniently considered when the whole facts of this epidemic have been recorded. In the mean time it is sufficient to state that the disease, as it broke out at Hurdwar, appears to have been introduced by pilgrims from some infected district.

41. The universal testimony of all the officials, who were present, bears witness to the extreme cleanliness of the camp and to the care and success with which the conservancy arrangements were carried out. The opinion of the Natives themselves, with regard to them, is thus given by Mr. Robertson, the Magistrate of Saharunpore. "The Native hakeems," he says, "attribute the appearance of cholera to the smoke from the furnaces used for burning the filth from the latrines on boulders. The mass of the people, however, attribute the outbreak to the circumstance that we buried the filth from the latrines in

Native opinion of the conservancy arrangements.

trenches close to their tents. They assert that this answered admirably while the weather continued dry, but that the extremely heavy fall of rain on the night of the 11th saturated these trenches, raising a miasma that affected the whole people." It is not to be wondered at, that an ignorant and terror-stricken multitude should have seized on the chief new feature of the arrangements as the cause of all their troubles. Other fairs, they argued, in which no attempt had been made to interfere with their ordinary habits, had, as a rule, come and gone without any serious sickness. Now when a new system had been in force how disastrous were the results. A religious element also largely entered into their feelings. In former years they had trusted to *Kallee*, and she had preserved them in health. What were all these so-called sanitary improvements, but evidence of distrust, and was it strange that the goddess should resent them, and visit the offending people with her grave displeasure?

42. The encampment at Hurdwar consisted of a long strip, nine miles long by a mean of three in breadth, and thus covered an area of twenty-seven square miles. Deducting "one-fourth or one-fifth for ground which was not occupied, we may assume," says Dr. Cutcliffe, "that the remainder, or say twenty-two square miles, represent the amount of ground actually encamped on." To superintend the cleanliness of so large an area, occupied by a population not much smaller than of London, was no light task. To remove the filth without the camp was believed to be impossible. Even assuming that the number of pilgrims present at any one time exceeded two millions, it would have been simply impossible, remarks Mr. Williams, the Commissioner of Meerut, to have arranged for the removal of above 446 tons of dry matter daily, which he estimates would have been the amount to have been carried away on a moderate computation.

43. Admitting all the difficulties which had to be encountered in carrying out an efficient conservancy system over so large an area and for so vast a population, it must still be remarked that the objections which were urged by the Natives against the arrangements in force were not altogether without some grounds; while there is no reason whatever to suppose that they originated the disease, it is not improbable that they may have favoured its spread. The system of disposing of sewage by burning it in furnaces is open to question. Great heat will doubtless destroy the cholera germ or any other organic element, but it appears very doubtful whether in a smouldering fire the poison may not be given off with the smoke during the few minutes of heating when the temperature to which it is exposed cannot exceed that of a tropical sun. In disposing of excreta, especially under circumstances in which there is reason to fear that cholera may become epidemic, it is of the utmost importance that the means employed should without doubt be effectual. There is no evidence to show that the exhalations of these furnaces had any effect in disseminating the disease among the people of the fair, but it is not the less advisable that in future arrangements this mode of treating the sewage should not be resorted to. All excreta should be so disposed of that neither the air nor the water supply can be contaminated. So far as is yet

HURDWAR

JODALAPOOR SECTION

(Commencement of
And extending 5 Miles Westward

Cultivation

Hospitals
for Contagious
Diseases

KUNKHUL

Kunkhul
Dispensary

SECTION

To Raiwala

BIJNOUR

1/4" = to 1 Inch.
0 100 200 Feet

known there may be a risk of contaminating the air by the use of furnaces. Further enquiry may demonstrate that this is a mere imaginary danger, but until this has been demonstrated to be the case, the possible danger should not be left out of sight.

44. But if it is possible that the furnaces may have caused contamination of the air, it is still more possible that the water ^{Possible contamination of the water.} may have been contaminated by the latrines. It was only "in certain few and exceptional cases it was absolutely necessary to provide latrines on sand and boulders where the trench system could not be worked"; the excreta consumed in the furnaces was therefore comparatively small in amount. "Nearly all the latrines," says Dr. Cutcliffe, "were situated on an earth soil, or on such an admixture of earth and sand, as admitted the digging of transverse trenches, one foot broad and four feet deep." The annexed sketch map will explain the position of Hurdwar, of the bathing ghat, and of the different sections of the encampment. In the island of Roree the arrangement of latrines, blocks, and roads, which was adopted in all of them, is shown. It will be observed that the latrines were numerous, and were dotted over the whole ground occupied by the people. The soil is very porous, consisting of river sand, pebbles and boulders. The trenches were carefully covered over with several inches of rammed earth, but they had no roofs, and were completely exposed to the weather. In such a soil with the rain of the 11th and 12th the whole ground must have been more or less impregnated with sewage, and the water of the Ganges must have become contaminated with the accumulated excreta of an immense multitude. If any cases of cholera had previously existed, and the water supply, which it must be remembered was drawn almost exclusively from the river, thereby infected, the rapid spread of the disease might be explained.

45. To such an argument it may be replied that with the exception of ^{Objections to this theory considered.} the grass-cutter on the 9th no other person had been attacked till the 13th, but although this has been described as a "sporadic case," it cannot be considered as having no connection with the wide-spread epidemic which is known to have existed only four days afterwards, and with all the vigilance of the police it cannot be stated as a fact that no other cases occurred during the intermediate days. In so vast a multitude cases may easily have escaped detection, and the aversion of the people to be taken to hospital would induce them all, and especially the better classes, to conceal the disease. Again it may be argued that the Ganges is a large and rapid stream, and that even granting the possibility of the excreta of a few cases of cholera having found their way into it, the quantity must have been altogether insufficient to have infected the water drunk by the devotees. It yet remains to be discovered how small a quantity of cholera *contagium* is sufficient to propagate the disease. A proportion altogether inappreciable to the most delicate chemical test is believed to be enough, and in the late epidemic of cholera in England the discharges of two patients are supposed to have contaminated the river Lea and so to have spread the epidemic over east London. Whatever opinions may be entertained regarding the possibility or

even the probability of the water of the Ganges having been infected from the latrines, and having thereby spread the disease, there can be no question that at all fairs sewage should be so disposed of as to render any such pollution as far as can be impossible.

46. It is of the utmost importance to discover in what manner an immense multitude previously healthy suddenly became infected with cholera, for the whole history of the epidemic leads to the belief that, although very few were actually attacked at Hurdwar, the poison had been imbibed before they left the fair. There are to all appearance but two modes in which such a wide-spread infection could have taken place—either through the air or through the drinking-water. There is no evidence to show that there were any causes at work calculated to pollute the air with cholera *contagium*; but assuming that this *contagium* was really present among the people, there are several strong grounds for supposing that the circumstances were not unfavorable for its dissemination by means of the drinking-water. It has already been stated that the soil in which the trench latrines were placed was of such a nature as to favor filtration of their contents into the river, and that the heavy rain of the 11th and 12th must have passed through them. There are two other facts which support the idea that the people may have been and probably were infected by means of the water. In the first place such filtration carrying with it any impurities, and in all likelihood cholera *contagium*, must have been very active on the great bathing day—rain, it will be remembered, fell heavily throughout the 11th, and continued up till noon of the 12th, when the bathing ghât was crowded with devotees, and, secondly, there is the fact, that to drink the water of the holy river is no less a part of the pilgrim's object than to bathe his person in its stream.

47. Some additional and very interesting particulars have been furnished by Dr. Cutcliffe in a further report, copy of which has been received since the earlier portion of this narrative was sent to press, and they serve in a great measure to support the opinion which has been already expressed. "We have," he says, "proof sufficient to lead to the belief that the exciting cause—the *contagium* of cholera—was actually in the crowd. Is it possible to find the mode of the propagation of this exciting cause (*contagium*) in anything connected with the bathing? Allow me to explain what occurred at the bathing-ghât. The bathing-place of the pilgrims was a space 650 feet long by about 30 feet wide, shut off from the rest of the bed of the River Ganges by rails, which prevented the people from getting any further out into the river than the limits of the space which was thus enclosed. Into this long, narrow enclosure, the pilgrims from all parts of the encampment crowded, as closely as possible, from early morn till sunset. The water within this space was, during the whole time, thick and dirty, partly from the ashes of the dead, brought by surviving relatives to be deposited in the waters of their river god, and partly from the washing of the clothes and bodies of the bathers, who were all decently, though lightly, clad. Now, pilgrims at the bathing-ghât, after entering the waters, dip themselves under water three or more times, and then drink of the holy water whilst

saying their prayers. The drinking of the water is never omitted, and when two or more members of a family bathe together, each from his own hand gives to the other water to drink. This reciprocal offering of water takes place between friends as well as relatives, and the drinking is accompanied by exchange of vows of love and fidelity, or of friendship. These vows are held to be sacred in the extreme. Old feuds are thus made up, and love or good-fellowship is established between the drinkers. The quantity of water drunk by the bathers varies, but it is never less than about as much as can be taken up by the palms of the two hands, held together so as to form a cup, and usually several cups-ful are drunk.

“This custom it was to which, in my Hurdwar Report, I alluded, when I wrote of the ‘much-polluted water at the bathing-ghat,’ and again when I mentioned that ‘to drink the sacred waters of the Ganges was as much an object of the pilgrims as to bathe in its stream.’ Before leaving the water, the bathers usually wring out their clothes, so as to dry them as much as possible.

“Now, let us suppose that in any pen-like enclosure bathers were densely crowded together, and that amongst those bathers there were some who had very recently come from districts infected with cholera—some who had brought with them, indeed, the *contagium*, whatever that may be, of cholera. Let us suppose that the bathers dipped and moved about in the water, and wrung out their clothes in the water and drank of that water, would it be unreasonable to think that persons in drinking such water would probably imbibe the cholera poison washed from off the clothes or bodies of those who had recently come from infected places, or who even might themselves be infected? Is it an extravagant or a far-fetched idea that persons drinking of such water would very likely be directly poisoned? I think that, apart from the feeling of disgust at the dirt of the water, no one acquainted with the disease would like to experiment on himself by drinking the water from a pen in which bathers, amongst whom were some who had recently come from a locality infected with cholera, were crowded. For my own part, I should feel more than a suspicion that in drinking such water my life would be endangered by the poison of cholera.

“But at the bathing-ghat at Hurdwar there actually was a pen full of bathers who had been subjected to the predisposing causes of disease, and who had amongst them people fresh from a place infected with cholera, if not themselves actually at the time infected. These bathers in this pen all drank of water which was foul, and which must have been contaminated by whatever was washed from the bodies or the clothes of their fellow-pilgrims. I see no difficulty in supposing that, in drinking this ‘much-polluted’ water, the bathers imbibed the *contagium* of cholera, or imbibed that which developed the disease within them. It appears to me that it is possible that the sudden outbreak of cholera in different parts of the encampment the day following the great bathing-day, may have been due to the fact of the people having been congregated together into one spot, where some were directly poisoned by the imbibition of

the exciting cause or *contagium* of a disease to the attack or development of which other causes had predisposed them to succumb.

“ But it may be asked why this poisoning did not take place before the great bathing-day ? If the people were poisoned at the bathing-ghât, I am unable to say on what day the poisoning actually occurred. We do not know precisely how long a time is required for the development of the cholera disease after infection : we do not know the period of incubation, as it is called, of the disease. It is probable that the majority of medical men would expect the symptoms of cholera to develop themselves rapidly—not more than twelve or twenty-four hours, perhaps, after the imbibition of a large dose of cholera poison. On the whole, we may say that if the outbreak of cholera on the 13th was due to the poisoning of the people at the ghât, most men would think that the day in which that poisoning occurred was the 12th April.

“ Now, it is well known that, as a rule, those people who reside near to Hurdwar do not come to Hurdwar to bathe until the last, or nearly the last, day of the fair, and that on this last day every one who possibly can get to the ghât goes there and bathes. Major Watson and other officers who have been present at many Hurdwar fairs have explained this to me. From Bazpore, the cholera-infected place, pilgrims would get to Hurdwar in two or three days, and would probably come into the fair only in time for the great bathing-day. It is quite possible that the people who brought with them the cholera *contagium* did not bathe until the 12th, and that the delay in the outbreak of the disease may be so explained. It is certain, however, that the number of bathers on the 12th far exceeded that of any other day, and that, therefore, the chances of poisoning, from the presence of infected persons, or from persons who conveyed with them the *contagium* of cholera, were greatest on that day. It must be remembered, too, that the causes which would so strongly predispose to the breaking out of disease were not acting with full force until the 12th. As the predisposing causes of disease had reached their greatest intensity on the 12th, and as the chances of the presence of a possible exciting cause were greater on the 12th than on any other day, the probabilities are, if my hypothesis is true, that it was on that day that the infection of the pilgrims occurred.

“ If the poisoning occurred at the ghât on or about the 12th, we can easily understand the breaking out of the disease almost simultaneously in all parts of the encampment. There is in the subsequent history of the epidemic, and in its dissemination by the infected pilgrims, nothing that appears to me to be incompatible with the hypothesis which I have now put forth as a possible explanation of the cause of the outbreak of the disease. The hypothesis which I have now advanced is one which I have, from the date of last year's fair, believed to be the most probable explanation that can be conceived of the cause of the outbreak of the epidemic of cholera. Believing that this explanation might eventually be found to be true, and convinced that there can be no safety if the importation of cholera into a fair be not prevented, I urged in my Hurdwar Report that ‘Natives should be prohibited from setting out for these fairs from any place in which cholera or small-pox is known to be epidemic,’ and that, by constant supervision of the advancing crowds, ‘no

individual affected with small-pox or cholera should be allowed to proceed forward. He should be detained in hospital until cured, and be then sent back to his home.'

"In conclusion, I beg respectfully to urge that the correct determination of the causes of the outbreak of cholera at the Hurdwar Fair of 1867 is a matter of very grave importance ; for, should a wrong judgment on the causes of the origin of the epidemic be pronounced, attention in instituting future preventive measures will be misdirected ; and whereas time and labour may be devoted to latrines and to the general cleanliness of the encampments, it is possible that cholera unperceived may creep into the crowd, and, in spite of the best police conservancy arrangements possible, there develop itself with all its fury through a medium which, till too late, may be unsuspected, or if suspected, be unavoidable, on account of its being inseparable from, and an indispensable part of, the whole religious ceremony which pilgrims are bound to observe at the sacred bathing-ghat."

48. As has been already shown, the disease did not appear in an epidemic form till the day after that on which the religious ceremonies had ended. By the evening of the 15th, writes Dr. Cutcliffe, "the pilgrims had all departed ; and it was when they had left Hurdwar, and were beyond all sanitary control, that the disease began to spread amongst them. At former fairs, as I have previously shown, when cholera broke out, it destroyed the pilgrims in great numbers at Hurdwar itself, and since the laws which the disease observes in relation to crowds are known to be everywhere alike, we may be sure that it would, this year, have produced a terrible havoc in so vast and dense a multitude as were present at the *Cumb*, had it not been for the very complete arrangements that opposed both its outbreak and its diffusion." Very great obscurity, as has been already stated, hangs over the sanitary history of previous fairs, but all the evidence goes to show that for the nine years preceding 1867, cholera had been altogether unknown at the annual gathering, or had existed to so small an extent as to attract no attention, and yet during all these years there had been no sanitary arrangements whatever, and the whole camp had been most offensive. Excepting the fair of 1783, in which the epidemic was so severe, there is no evidence beyond vague tradition to show that the disease had ever been very destructive among the pilgrims so long as they remained at Hurdwar. Referring to Dr. Cutcliffe's remark above quoted, Mr. Robertson observes that "it is amongst Natives notoriously admitted that when cholera breaks out amongst the people, it does so chiefly on their return home from the fair and not to a large extent in the fair itself." The same peculiarity has been remarked in reference to most fairs in India. The longer a large mass of people are crowded together the more risk of the specific cause of cholera appearing, and returning pilgrims exposed to privation and fatigue are in circumstances most favorable for the specific cause to act. There can be no doubt, however, that once the disease appeared at the fair, the sooner the assembled multitude dispersed the greater their chance of escape. Any sanitary control that could possibly have been exercised over three millions or over

even one million of persons would have been utterly powerless to prevent its spread, and from all that is known of cholera in India, there is good reason to believe that had the pilgrims continued at Hurdwar for even a few days longer, the mortality amongst them would have been infinitely greater than it unhappily was.

SECTION II.

THE RETURN OF THE PILGRIMS TO THEIR HOMES, AND THE GENERAL DISTRIBUTION OF THE CHOLERA OF 1867.

49. Terror-stricken the vast crowd dispersed, many of them ill-clad and ill-fed, suffering from the effects of privation, all anxious to return as quickly as possible and leave the dreaded foe behind. Their very eagerness to escape, the fatigue which attended long and harassing marches, made them fall but the more easy victims to the disease. The roads in every direction were crowded with the unfortunate devotees, but the main routes adopted were three—one south-east through Rohilcund and Oude; a second south-west through the Seharunpore, Mozuffernuggur and Meerut districts; and a third north-west through Seharunpore to the Punjab.

50. It will be necessary now to follow these streams, to examine the reports which have been received from the various districts of Upper India, to ascertain as far as possible what are the facts, and to learn the opinions of the medical officers by whom they were observed. In the end of April, when there was no longer any doubt that a very wide-spread and formidable outbreak of cholera had appeared, a circular letter, dated 29th April 1867, was addressed by the Sanitary Commissioner to the civil surgeons throughout Upper India, requesting them to furnish information on the following points :—

1st.—To what extent has the disease appeared in your district? (The precise dates of its commencement and disappearance should here be given as nearly as possible.)

2nd.—Was it confined to the pilgrims, or did it also attack others?

3rd.—In the latter case, what facts are there to prove beyond all doubt that the disease was due to importation by the pilgrims?

4th.—What facts are there to show the period of incubation observed in the disease?

5th.—What measures were adopted to prevent the importation?

6th.—What success has attended those measures?

The information received in reply to these queries has also been supplemented in many cases by answers to the following questions contained in the Sanitary Commissioner's annual circular :—

Has there been any cholera during 1867?

If so, state—

. 1st.—Time and place of its origin, and also of its termination.

2nd.—Direction of its spread.

3rd.—Extent of sickness and mortality it occasioned.

4th.—Its causes.

What measures were adopted to meet the epidemic?

What success attended these measures?

Are there any observations connected with the direction and force of the wind during the cholera epidemic which are trustworthy? If so, what are they?

Have any facts come to your notice during the epidemic, tending to prove that the disease is propagated by contagion, or the reverse?

The local Governments were also requested to aid in every way in their power, and every assistance has been rendered. As regards the army both European and Native, through the kindness of the heads of the British and Indian Medical Departments, many reports have been made available, while the annual records of the jails supply details of the disease among the prisoners. Both of these contain many valuable particulars, and the data they supply are necessarily much more accurate and precise than can be obtained regarding the general population. The information derived from all these sources is of very great value, and forms a mass of evidence such as never has been collected with reference to any previous epidemic in India.

51. As regards the extent of the disease in the various districts, the data cannot be altogether relied on, for as yet the mortuary statistics are far from perfect. The points of chief importance are referred to in the second and third questions, and the replies which have been received to them will be given at length. Even at the risk of being prolix it is of the utmost importance that on a matter of so great moment the evidence of the witnesses should be recorded in their own words. The answers to questions Nos. 4, 5 and 6 are necessarily less precise, and an attempt will be made succinctly to summarize the information collected on these heads. It would extend this history to an undue length if the details of the disease in each military cantonment were given in the words of the original reports, but an endeavor will be made to state the facts as accurately as possible.

52. The mass of information derived from all these sources will now be considered. The facts gleaned from each district and from each military cantonment it may contain will be recorded. Commencing with Seharunpore it will be convenient to relate what occurred in the districts lying immediately to the south-west and south, and then accompany the pilgrims through Rohilcund. To advance onwards into Oudh would be the natural geographical course, but for reasons to be stated hereafter, it will be better to consider the epidemic of cholera which covered that province in a succeeding portion of the report.

The events in the Meerut and Allyghur districts will next be noted, and then commencing the Punjab, with its most southern portion, Godrgaon, the disease will be traced as it successively appeared in its various parts upwards to Peshawur. Next will come the Agra division, and an account of the disease in Rajpootana and Central India. The epidemic in Oude will be described, and then in succession will be noted the facts which have been ascertained regarding the history of cholera in the Benares division, in Behar, the Central Provinces, and Lower Bengal during the year 1867.

53. The district of Seharunpore, in which Hurdwar is situated, first demands attention. Excluding the "sporadic" attack of the 9th, the first known case of cholera occurred at the fair on the 13th April and the last on the 19th of June. Between these two dates 1,323 deaths are reported to have occurred among the people. The disease was chiefly confined to pilgrims. "Excepting those who had been at Hurdwar," observes Dr. Cutcliffe, "very few people have any where in the Seharunpore district suffered from cholera." As regards importation his evidence is very strong. "It was on the 17th April, i. e., four days after the arrival of the pilgrims at Seharunpore, that cholera first attacked in the town any individual who had not been to Hurdwar. In no single instance has there been reported to me a case of cholera in any town or village out of the line of march of the pilgrims. The cholera cases which first occurred in the towns and villages were confined, so far as I can discover, to those who had been present at Hurdwar, and in these places the pilgrims and the disease appeared for the most part simultaneously."

No cases occurred in the jail, which contains about 180 prisoners.

54. Within the Seharunpore district, and only $17\frac{1}{2}$ miles from Hurdwar, is the cantonment of Roorkee. It was occupied by a wing of Her Majesty's 79th Regiment, and by a body of Sappers and Miners. It is besides the head quarters of the Thomason Engineering College, of the Ganges Canal, and of large Government workshops. The first case occurred here on the 13th, the same day as the disease appeared at Hurdwar. The epidemic soon spread in the town, but was never very severe. In all there were 145 cases and 76 deaths up to the 27th May, when it is said to have disappeared.

The Europeans entirely escaped, but there were two cases among the Native Sappers. As regards the source of the disease, writes Dr. J. P. Walker:—"My opinion is that cholera was imported into Roorkee by pilgrims returning from Hurdwar, where some hours previously it had appeared amongst the two or three millions assembled for the Koom Mela. The first case at Roorkee occurred late on the afternoon of the 13th April 1867, in the person of a pilgrim from Hurdwar. Up to the 19th all the affected, with one exception, were returning pilgrims. The exceptional case was the cook of the cholera hospital who was attacked on the 18th or 19th. The second non-pilgrim attacked was a thatcher

of the town, and the third, on the morning of the 22nd, was the compounder of the Ganges Canal Hospital, who was regularly on night duty at the cholera hospital."

55. The district of Deyrah Doon lies along the north-east side of that of Seharunpore, and one portion of it is close to Hurdwar. The first case here is reported to have appeared on the 16th April. The person attacked was a traveller and most probably a pilgrim, but this point is doubtful, no special report having been received from the officer who was civil surgeon of Deyrah at the time; the data are therefore imperfect. Between the 16th and 29th April it is said that no fresh cases occurred; on the latter date there were two, and two more on the day following. With the exception of the first case, all those attacked appear to have been residents of the district. In the Deyrah jail among some 40 prisoners there were 12 cases and 2 deaths from cholera during the months of April and May. From the small proportion which proved fatal the disease appears to have been of a mild type. The civil surgeon returns them under the head of "choleraic diarrhoea." Of the Body Guard none of the men suffered, but 5 of the camp followers were attacked and 3 died. The medical officer, Dr. Banister, writing of the epidemic in the district, says "cholera was imported by pilgrims returning to their homes."

56. At the hill station of Mussoorie, which looks down on Deyrah from an elevation of about 7,000 feet, and is only 30 miles distant from it, the disease first appeared on the 27th April in the wife of an officer who had just arrived from the plains. On the 30th two cases occurred among natives, one of whom had arrived from Deyrah two days previously. At Mussoorie the disease was but slight, and disappeared on the 22nd May, by which date there had been 12 cases and 10 deaths. Landour, which is a convalescent dépôt for European invalids, and which joins the civil sanitarium of Mussoorie, escaped entirely during April, but among the native residents at this place there were 4 deaths from cholera during May.

57. The district of Mozuffernugger lies immediately to the south of Seharunpore. From Hurdwar to the civil station of Mozuffernugger the distance is about 50 miles. The particulars furnished by Dr. Kirton are very interesting: "On the 15th April the pilgrims began to return into the district in numbers from Hurdwar by the Roorkee road, and it soon became evident that cholera to a great extent existed amongst them. The first authentic case of cholera was seen by me on the morning of April 15th; the patient, a woman, was brought to the dispensary in a state of collapse, and died two hours after admission. The pilgrims reported that many deaths had occurred from cholera on the road. They were, they said, in great alarm on account of the pestilence, and expressed much anxiety to hurry on so that the journey might the sooner be ended. As the stream of traffic increased in density, it was seen that not only cholera existed amongst the people, but that small-pox, diarrhoea, and fever also prevailed. Altogether on April 15th 3 cases of cholera were admitted to the dispensary,

and 96 cases of sickness, including cholera, diarrhoea, fever, &c., were treated on the road. On April 16th the stream of traffic, on the main line of road, became very dense, and continued so all through the following day. Although by far the greater number of pilgrims were travelling on foot, yet every conceivable form of vehicle appeared to have been called into use. Besides bullocks, which were used chiefly in dragging the carriages, camels and horses were to be seen in numbers, while elephants and mules were also used. The women travelled mostly in covered hackeries, crowded generally in parties of ten or twelve, with children, in each conveyance. It was in these that the worst cases occurred: * * * *

On April 28th the wife of the native doctor in charge of the dispensary was seized with the disease, and died after a few hours' illness. This woman had not visited Hurdwar."

The total number of persons attacked was 1146, of whom 737 died. The prisoners did not suffer.

58. Dr. Kirton's opinion on the question of importation is very decided.

Evidence of importation. "The disease," he says, "was not confined to pilgrims only, but attacked other persons also. The number of pilgrims and other persons in the district attacked by the disease may be shown as follows :—In the district—pilgrims 483, other persons 603, deaths 724. Dispensary cases, pilgrims 57, other persons 3, deaths 13, Total—pilgrims 540, other persons 606, deaths 737. The disease was due to importation by the pilgrims. No cholera existed in the district previous to the Hurdwar Fair, and it appeared in the district immediately on the return of the pilgrims after the close of the fair."

59. The district of Bijour lies to the south-east of Seharunpore and is separated from it only by the Ganges. Here in the immediate vicinity of Hurdwar the disease broke out suddenly on the 13th April, the same day as that on which it appeared at the fair. On that date there were 23 cases and 22 deaths. During the first week the number attacked was 871, and of these 426 died. It then gradually declined and disappeared altogether in the middle of June. By that time there had been 2,201 cases and 1,065 deaths. The Jail altogether escaped..

60. The Civil Surgeon, Dr. Gardner, states that the disease "was at first certainly confined to pilgrims and persons returning from Hurdwar; but at a later stage, in several places, persons who had not been to Hurdwar at all were affected." A special case of supposed communication of the disease is thus narrated :—"At the village of Bisahat 2 men who had returned from Hurdwar Fair died of cholera on 30th of April, and their clothes were not burned according to orders given, but washed in a pond which was inside the village and the water of which was used for domestic purposes. On the 1st and 2nd May, in the same village, 16 attacks occurred, giving about one day only for period of incubation."

61. The station of Moradabad is 86 miles distant from Hurdwar. The first case occurred here on the 15th April, and up to the middle of May, when it disappeared, there had been, 1,247 attacks, but only 178 deaths. The Civil Surgeon Dr. Collison remarks :—
 Evidence of transportation in-
 to the Moradabad district. “Cholera first made its appearance in the Moradabad district in consequence of the return of pilgrims from Hurdwar on the 15th of April, and the last case occurred at Kāsheepore on the 12th of May. The disease was not altogether confined to the pilgrims, but it was almost limited to the line of road taken by them through the district. Some of the non-pilgrims attacked were living in the same house with pilgrims who had just returned from Hurdwar, and there was no cholera in the district until the pilgrims returned from Hurdwar.” The statement of the district officer is equally positive :—“Under no circumstances could more satisfactory proof have been obtained of the communicability of the disease. Previous to the arrival of the pilgrims not one case had occurred; simultaneously with their arrival it attacked residents of the towns with whom they came in contact, and assumed for a time an epidemic form; nor was this confined to one stream of pilgrims;—wherever they went the result was the same.”

62. Out of a strength of nearly 300 European soldiers quartered at Moradabad no cases occurred till the month of July. The European troops in
 cantonments suffer slightly. In that month there were four, and in August three; five of the seven died. While the Native troops were suffering, the Europeans were free from the disease.

63. Among the Native soldiers, whose average strength was 382, the disease was not severe, but it appeared much earlier. The particulars of the outbreak are thus related by Dr. Cavendish Johnson, the surgeon of the 29th Regiment Native Infantry :—“The first case was admitted on the 16th April, the patient a sepoy, who had returned with the pilgrims from Hurdwar that day. On the 17th a similar case occurred under similar conditions except that the period of death was delayed till the 19th. Both these men were young soldiers of short service (Sikhs) and both returned from Hurdwar the same day. The disease did not show itself again until the 24th.” Another case (a drummer) on the 25th, a fourth on the 29th. On the latter date an old woman living in the drummers’ lines was seized. “On the 30th a dhobee and a Sikhnee, wife of a Sikh sepoy, were attacked. The dhobee made a good recovery. The soldier’s wife lingered till the 3rd May when she died. Another Sikhnee living in the same enclosure and suckling a child was seized. She recovered a very severe and lasting collapse. Both mother and child are now quite well and the latter is still at the breast.” Only five cases and five deaths are entered in the table of Native troops, but this does not include camp followers, of whom the number seized is not noted. Remarking on the different manner in which the same circumstances affect different individuals, Dr. Johnson observes that the sepoys who had been to Hurdwar and were attacked, were two out of 250 who had obtained leave to be present at the fair; that all had been exposed to like privations, had rejoined at the same time, ate much the same kind of food, yet of the 248 not one man had any symptoms resembling those of cholera.

64. In the hill country of Kemaon and about 60 miles from Moradabad lies the station of Nynee Tal, which has for some years been the head quarters of the Government of the North-Western Provinces during the hot months, and attached to which is a convalescent depôt for European soldiers. In the outbreak which was confined entirely to the Native community at this place, twenty-two cases altogether occurred between the 22nd of April and the 11th of June 1867. "The first case," Dr. Hilson reports, "showed itself in a female pilgrim from Hurdwar, who came up to Nynee Tal from Huldwanee on the 18th or 19th of April, suffering from cholera and choleraic diarrhoea, and who went to reside with some relatives in the compound of Pear Tree situated on the margin of the Lake and tenanted by the establishment of Messrs. Drew and Co. She was brought to the dispensary on the 22nd in a state of collapse and died on the following day. From her own statement and from enquiries made at the time I ascertained that this woman was undoubtedly a pilgrim from Hurdwar, and there is also no doubt that she was the first person in whom the disease appeared at Nynee Tal. On the 22nd four other cases occurred among the servants of Colonel Barwell, living in the compound of 'New House,' on the margin of the Lake and immediately adjoining that of Messrs. Drew and Co. These were not pilgrims and had been for some time resident in the station, but they were in frequent communication with and attendant on the preceding case. On the 23rd and 24th four fresh cases occurred in the same locality and then the disease ceased for a time. All these cases from the 22nd to the 24th inclusive occurred in two compounds adjoining each other, and were all apparently caused by contagion from the pilgrim. The disease never re-appeared in that part of the station.

"On the 7th of May a native living on the compound of 'Strawberry Hall' in the Ayah Puttah Hill was attacked. Four or five days previously he had come up from Káládoonghy at the foot of the hills where the disease was raging, but he declared that he never came in contact with, or indeed ever saw, any cholera patient while there. On the 8th a mehter and a cooley living in the large bazaar were seized by the disease. The former arrived in the station on the 30th of April, having come from Sewarah, a village in the plains, about forty miles from Káládoonghy on the Hurdwar road. The latter came from Jewley, an infected locality, two or three days before he was attacked. It is difficult to say whether these three cases were sporadic, or whether they resulted from contagion, communicated by pilgrims or others suffering from the disease in the plains, but in all the others which occurred in various parts of the station between the 10th of May and 11th of June, the cholera was entirely of a sporadic nature, and showed no tendency whatsoever to spread by contagion. On some occasions a Jampanee would be attacked while living with three or four others in a small outhouse 8 feet by 10 feet, and would not be removed until collapse had fairly set in, yet none of his comrades, although sleeping alongside of him, would show any symptoms of the disease."

65. Almorah is a sanitarium and military cantonment about 40 miles further in the interior of the Kemaon Hills than Nynee Tal. Here the disease appeared on the 25th April. "It was chiefly confined to the pilgrims," says Dr. Govan. On the

subject of importation he remarks that two facts are known; "*first*, that no cholera had been prevalent till the pilgrims arrived; *second*, that their arrival was the signal for several cases in the surrounding villages." From the 25th April to the 5th July, 166 cases were registered, of which 126 died. In the native regiment and jail, there were altogether but two cases, one in July and the other in August.

66. The particulars furnished by Colonel. H. Ramsay, the Commissioner of Kumaon, are of special interest. "It is impossible to give any correct information regarding these pilgrims from their leaving Hurdwar to the time of their reaching home, because they concealed, as far as possible, the fact of their having had the cholera among them, and passed on as rapidly as possible, leaving their sick to die, and their dead to be buried, if any died during the march: those who died during the halt were buried or thrown away in the jungles. We have correct data as yet only regarding those pilgrims who went from the villages at the foot of the hills. The Hurdwar Fair was over on the 12th April, and pilgrims from the villages near Káládoonghy and Huldwanee reached their houses on the 19th idem. Some died the day they arrived; others communicated the disease to their friends, without suffering themselves. This has been clearly proved in several instances. In one case, a woman, on her return to a village about three miles from Huldwanee, went to her brother's house; he was taken ill almost immediately after; he died. His son, mother, and two wives died within a few days, while the woman who brought the disease escaped altogether. Within a few days the cholera spread, and, exclusive of those who were buried or burned by passing pilgrims, not less than 500 died in Kota Chukhata. Of these, 307 died in the villages between Káládoonghy and the Sookhee River (about 15 miles). While the cholera was carrying off 40 or 50 a day, travellers appeared to pass with impunity. Very few from these Bhabar villages went to Hurdwar, and of the 307 who died, about 30 only were pilgrims.

"The pilgrims carried the disease to the hills; it broke out in the villages as soon as the pilgrims returned, and has continued spreading ever since. In those pergunnahs from which none went to Hurdwar, there is no cholera yet, except in a few villages, and in the latter it has been proved that it was brought from other villages where cholera was bad. In the pergunnahs of Dhyaniorow, Kalee—Kumaon, and Chougurkha, from which many went to Hurdwar, cholera has been going on since the 20th or 22nd April; and in other pergunnahs which sent no pilgrims there is no cholera. This is conclusive evidence that the disease was imported from Hurdwar. At the foot of the hills, the disease broke out on the 19th April, the very day the pilgrims returned." So convinced were the people as to the danger of importation that "pilgrims in Kumaon, instead of meeting with respect, received unlimited abuse from all classes on their return from Hurdwar."

67. The Terai Pergunnahs lie immediately below the Kumaon Hills. It has already been recorded that cholera appeared here previous to the fair, and that in all probability the pilgrims attacked in this district on their way to Hurdwar may have been

the means by which the disease was introduced among the large assemblage. The disease was "rapidly disappearing," writes the Superintendent, "when the return of the pilgrims caused it to break out afresh on all sides. The villages which suffered most were those close to the direct line of road to Hurdwar, and it was in villages so situated that the disease first appeared. Many villages removed some distance from this line of road had not a single case of cholera, while others were decimated, and in one case the village has entirely broken up."

"The visitation continued for about 40 days; 1,113 persons were attacked, and of these 596 died."

68. In the Bareilly district, which immediately adjoins the Terai, cholera. Its appearance in the first appeared on the 18th April. The statements of the authorities are very plain and emphatic. The Commissioner Mr. Inglis writes:—"The disease appeared first among the pilgrims returning from the Hurdwar Fair, but afterwards attacked others who had not been there. That the disease was communicated by the pilgrims is shown by the fact that it was almost entirely confined to the lines of road along which they travelled, and to places to which people who had been to the fair returned." Dr. J. C. Corbyn says, "the disease was propagated in the direction the pilgrims went." The Magistrate Mr. E. Colvin states:—"It is clear that the cholera did not reach this district before the pilgrims; it appeared simultaneously with them, and then spread from them to the other inhabitants." In a subsequent report his opinion is, if possible, even more decidedly expressed. "There cannot be the slightest doubt," he says, "that the disease was imported by the pilgrims, for previous to their return there did not occur a single case of cholera. It was only on their return to their homes that the disease appeared at those places." Between the 18th April and 27th May when the cholera ceased there were 552 cases. Of these only 63 are said to have been fatal.

69. The prisoners and Native troops at Bareilly escaped altogether. Among the European soldiers one man was seized in May, a second in July, and a third in August, and of these two died. Dr. Innes, the Deputy Inspector General of Hospitals, writes that "the visitation was confined to the married quarters. The families from these were placed in tents, pitched 100 yards in rear or to the south-east of these barracks. Two men, three women and a child had previously died from cholera. They remained under canvas from the 17th August until the 6th September, having once taken up fresh ground in order to facilitate the proper conservancy of the camp. There were no cases under canvas." The comparative immunity from cholera which the cantonment of Bareilly has hitherto enjoyed is very remarkable.

70. Budaon is another of the districts of Rohilcund and immediately joins Bareilly. The stream of pilgrims which passed through it was not large. Dr. Walsh records "that the disease first appeared in this district at Bisnowa on the 18th April; two cases were reported and two deaths. On the same day one case occurred at mnuggur. Its first appearance at the sudder station

was on the 21st April when two were attacked, of whom one died; the disease confined itself solely to the pilgrims up to the 4th May. There was not a single resident attacked before the 4th May." Dr. Walsh expresses his opinion that "there can be no doubt that the disease was due to importation by the pilgrims." Up to the 11th May there had been 151 cases and only 14 deaths reported.

71. The Shajehanpore district, which lies south east of Bareilly, suffered longer and more severely from cholera than any of the other districts of Rohilkund. From April to September nearly 3,000 persons had died of the disease, or about one half of those attacked. Even by the middle of October the pestilence had not ceased. The first case occurred on the 24th April. It was that of pilgrims returning from Hurdwar. Dr. Harris's opinion as regards the origin of the disease is very decided. "The fact of the importation by the pilgrims," he writes, "is self-evident, as the disease was unknown in the district until the 24th of April last, when the first case occurred among some of the pilgrims at a place called Bantra, in this district."

72. The Shajehanpore Jail was one of the few in the North-Western Provinces which suffered from the scourge. In all there were 22 cases, of which 6 ended fatally. The first was in May; the three next in July, and the remaining 18 in August. "As quickly as possible, a large number of the prisoners were moved to a large native building, and among them no cases occurred, while the disease was lessened in the jail."

73. The Native soldiers, numbering about 200 men, suffered very slightly; only five of them were attacked; but the head quarters of Her Majesty's 36th Regiment, the only European troops in the cantonment of Shajehanpore at the time, suffered severely. Suddenly on the 8th of May a woman belonging to the regiment was attacked. She was at once carefully isolated, and the remaining families vacated their quarters that evening and went into camp on a dry site near cantonments. Their barracks were then thoroughly cleaned out and fumigated, and no more cases having occurred either in camp or cantonments, they returned to quarters in ten days. For more than two months subsequently, the troops preserved complete immunity from cholera, though, as reported by Dr. Ball, the Surgeon in charge, the mortality amongst natives in the city continued very high.

74. Towards the end of July a second case occurred. The same measures of prevention were at once taken, and the company affected moved out into camp near the station. On the 9th August, however, on the occurrence of a third case the day before, it was deemed prudent to detach head quarters and three companies. They accordingly marched that evening to an encampment five miles to the south west, the neighbourhood of which was reported to be free from cholera. The weather had been very unsettled for some time, and it was with some difficulty a proper site for a camp could be found, as a great portion of the country was inundated. There was heavy rain again with thunder and lightning on the 13th August,

but the health of the detachment did not suffer. A single case of cholera occurred on the 11th which terminated fatally in six hours. The three following days passed without any symptom of disease, but on the 15th a fresh case occurred. A week elapsed, when on the 22nd August a Sergeant of the Regiment, who had been acting on Provost duty, was attacked. Ground was changed on the afternoon of the 27th consequent on the occurrence of a fresh case two days before. There were no cases for six days after this change of camp, but on the 2nd September another case, the last in the detachment, occurred. On the 11th September the disease having disappeared, camp was broken up, and the troops returned to cantonments.

75. The party left behind at Shajehanpore during the absence of the head quarters' detachment consisted of two companies, the married families, and the sick in hospital. One of the companies had been moved into camp near the station, as already stated, about the end of July, on the occurrence of the second case of cholera. A scarcity of tents prevented the removal of the entire wing, and it was not till the 14th August that sufficient tentage was procured to enable the remaining company, married families, and sick to vacate their quarters. One of the regular cholera camps at Peina, $2\frac{1}{2}$ miles north of the station, was occupied forthwith, but meantime three cases of cholera had occurred, all of which eventually proved fatal. It was not considered desirable to take these cases into camp with the party, so they were left behind in hospital. Immediately on arrival in camp another fatal case occurred, and on the following morning "a broken down old soldier, who had been a long time in hospital, died with symptoms of collapse." It had been arranged that the party should cross over the river Kanout to ground well adapted for a cholera camp, but the design was frustrated by the breaking down of the bridge of boats. On the evening of the 16th August, therefore, the party marched to a new camp $3\frac{1}{2}$ miles north of the old one. During this march a woman was seized with cholera and died on the 17th, and at the same time the hospital orderly, who had been in constant attendance on the cholera cases, was attacked. He survived till the 26th August. There were no fresh cases on the 17th, but on the 18th August there were eight admissions. On the 19th, the party again changed ground a short distance to the south-east of the previous camp. During the day two men, one woman, and two children were seized with cholera. The state of the weather was such as to render further movement impossible till the 25th August. Meantime four fresh cases of cholera occurred in camp, and the detachment marched to a new camp near Kudhouth. Heavy rain again set in, and a neighbouring tank having overflowed its banks, a portion of the camp was nearly inundated. A very virulent case of cholera occurred on the 28th August, and on the morning of the 29th "the detachment marched to its final encamping ground near Newathopore." Here they had one case, the last on the 30th August. There was great improvement subsequently in the general health of the party. Ophthalmia, which had been long prevalent amongst the women and children, gradually disappeared, and the men

recovered their wonted vigour. The detachment returned to quarters on the 13th September.

76. The most noticeable feature in this outbreak at Shajehanpore is More favorable results in the comparative immunity from cholera of the the detachment first moved. head quarters party of the 36th Regiment. The men of the three companies, which accompanied head quarters to camp, were similarly exposed with those of the other companies and married families, and yet the disease was much less prevalent and fatal amongst them. As remarked by Dr. Ball, the sanitary conditions were the same in both, and the other circumstances were almost identical. He says—"I fail to discover any local causes in the encampments selected or in the general hygienic arrangements to account for so remarkable a difference, nor, *a priori*, is it probable that foci of disease should have been repeatedly pitched upon, notwithstanding every care and anxiety in one case, and avoided in the other." There was one important difference, he states, in the conditions to which the parties were subjected. "One marched out of the infected locality on the first appearance of the disease, the other, from unavoidable causes, was detained in it nearly a week." An unusual number of sick attendants were attacked with cholera during the progress of the epidemic. There were six Europeans employed on this duty, and of these three suffered from the disease. This is a large proportion, but, as Dr. Ball remarks, the arduous nature of the duties, the continuous fatigue and loss of adequate rest would involve special liability to any prevalent disease, setting aside altogether the idea of contagion.

77. As has already been stated, the natural course from a geographical Oude and some other parts to be considered afterwards. point of view would be to advance from Rohilcund to Oude and detail the facts of the epidemic in each district and cantonment of that province. It will be more convenient, however, first to trace the disease in those parts of the country in which its appearance was coincident with, or followed immediately after, the arrival of the pilgrims, and on the confines of Oude, which lie more than 200 miles in a direct line from Hurdwar, the evidence on this point becomes indistinct. Oude and other parts of the country, therefore, to which similar remarks apply, will be discussed in a subsequent part of this report, and the districts which lie to the south-west of Hurdwar will now be considered.

78. The populous district of Meerut with its large military cantonment Occurrences in the Meerut district. lies immediately to the south of the district of Mozuffernuggur, the occurrences in which have been already detailed. The following interesting extracts taken from Dr. Moir's careful report of the epidemic give a resumé of the extent to which the people in Meerut suffered, and also that officer's opinion on the question of importation :—
"It may be stated that cholera was in the first instance almost altogether confined to the towns and villages on the roads by which the pilgrims returned from Hurdwar, and was consequently most severe in the western portion of the district, as by far the greatest number of the pilgrims passed through it. As far as is known there was not a single case of cholera in the district before

the return of the pilgrims from Hurdwar. They began to reach Meerut in straggling bodies on the 14th April, and on the 16th the most advanced portions of the great mass came up and continued to flow fast in one undiminished stream for five days, after which it began to decrease. The first case of cholera in the city of Meerut reported by the police was on the 14th April, when a resident is said to have been attacked, but not till the morning of the 16th did any case come under my own observation. It was fatal; the victim was a pilgrim returning to Agra—a sepoy belonging to the Native Regiment at present stationed there. Within the next 12 days cholera was reported from 30 out of the 33 police stations in the district. The towns and villages near the roads along which the pilgrims chiefly travelled were most severely attacked, and in most instances in the order in which they were reached. From these numerous centres, the disease soon spread to the neighbouring villages, and before the end of April 736 cases were reported by the police, attended with 162 deaths; the total number of persons treated in hospitals throughout the district in April was 339, of whom 87 died. Of the treated cases 205 were residents, and 134 pilgrims, and the respective deaths were 53 and 31. The police reported the number of persons attacked in May (all residents) as 2,903, and the deaths as 916; in June the respective numbers were 795 and 332, and up to 22nd July 158 and 37, which gives the total number of cases in the district as 4,592, and the deaths 1,447 according to the police reports, from the commencement of the outbreak up to July 22nd." Even then the disease was still lingering in the district and continued to be reported from six police stations, though the numbers were few.

79. "That the disease was imported by the pilgrims," writes Dr. Moir, "seems to me to be proved beyond all reasonable doubt. As before stated there was no cholera in this district, in April last, before the pilgrims entered it on their return from Hurdwar. It is well known that cholera broke out among them at Hurdwar, and that it accompanied them on their journey through the districts of Scharunpore and Mozuffernuggur, and also through this district, where the severity of the disease bore a direct proportion to the number of pilgrims, being most severe where the pilgrims were most numerous, and *vice versâ*. Wherever the pilgrims went, cholera appeared, and in almost every instance direct communication between infected persons and the places attacked could be traced.

"Of the 30 police stations above referred to, cholera manifested itself at 10 among pilgrims and residents on the same day, at 16 other stations it appeared among the residents three days on an average after the arrival there of pilgrims suffering from cholera. At one station the residents escaped for 12 days, and at three other places no residents were attacked at all."

80. Both the Native troops and the Jail preserved perfect immunity throughout. The European troops also escaped during the time the disease was at its height among the general population. Suddenly, on the 15th August, the first case of cholera occurred, "without its advent being ushered in by any preliminary cases of bowel complaint." By this time the district was well nigh clear of the malady alto-

Strong evidence of importation.
Outbreak among the European Troops at Meerut.

gether so that it is difficult to account for this sudden outbreak. Dr. Gordon, the Deputy Inspector General of Her Majesty's British Forces at Meerut, remarks that "the epidemic seemed to have travelled from Moradabad, about 80 miles to the east of Meerut, as the 36th Regiment there had suffered a few weeks before, and there was a strong and persistent easterly wind blowing at the time." The Native population of Meerut and its vicinity was scarcely touched by this second epidemic; nor were the Native followers of the European regiments, only two of whom died. The disease appeared first in the Royal Artillery, two of whom were struck down on the 15th August.

81. The 1st Battalion of the Buffs had a case on the 17th, and from that date to the 2nd September one or two cases occurred daily. Cholera then burst out with great severity, and continued its ravages undiminished till the 14th, when it began to subside, and disappeared entirely on the 25th September. It spared neither age, sex nor temperament, but attacked all indiscriminately. The regiment was speedily placed under canvas, only a few men and their families being left to occupy the unaffected barracks; but as the disease also showed itself in them (five fatal cases having occurred), they too were ordered into a separate camp on the 1st September. A short lull was now apparent, but on the 2nd cholera again became virulent, and on the 4th the regiment removed to a new encampment along the Bijnour Road. The married camp of the Buffs, consisting of women and children, sick in hospital, and about 150 men, moved out of cantonments, as already stated, on the 1st September, and encamped about a quarter of a mile distant from the rest of the regiment. On the 6th, cases continuing, they moved again, but with no good effect, for the disease became even more virulent up to the 13th September. On the 10th they changed encampment a third time, and three days afterwards the disease subsided, but as the rains had ceased and the weather was now becoming warm, a further remove was made into a tope of trees, where they remained till their final return into cantonments on the 1st of October. In the head quarters' camp improvement began to show itself on the 9th September, but not till the camp had shifted ground three times. On the 15th the men again removed in sub-divisions for shelter under topes, from which date the disease rapidly declined. They were brought back to cantonments by detachments, the third and last returning on the 9th of October. During the interval from the 15th August to the 25th September the Buffs lost one officer, 105 men, 12 women, and 20 children, in all 138, inclusive of three cases of choleraic diarrhoea. The total number of cases of cholera treated was 155, and of these only 22 survived, which gives the appalling mortality of 85·7 per cent., perhaps the highest death rate from the disease that has ever yet been reached. The regiment was more than decimated.

82. As already stated, cholera appeared first in the Royal Artillery on the 15th August, when there were two cases, from different though contiguous barracks. On the 20th August, three batteries were moved into camp on the Allygurh Road, and on the 22nd were followed by the heavy battery. It was not found necessary to

Few cases among the Artillery and Hussars.

change ground, as only two cases of cholera occurred in camp on the 6th and 22nd September. On the 24th these batteries returned to cantonments, but that in which the last case occurred changed ground and did not return till the 3rd October. The D-A. Royal Horse Artillery did not leave cantonments at all, neither did the sick in hospital, nor the women and children. There were five cases in all amongst the men of the Royal Artillery, all of which were fatal. Five children also fell victims. The 19th Hussars remained free of the scourge up to the 8th September, when a man under treatment in hospital for contusion was seized and died, and on the 20th September a woman was also carried off. It was not considered necessary to move the regiment from barracks, no further symptom of cholera having appeared.

83. South of Meerut is Boolundshuhur. No report has been received from the Civil Surgeon, but the replies of the Magistrate are very clear and concise. "Cholera," he says, "first made its appearance in this district on the 19th April. The first place attacked was Galaoti, the first point where the returning pilgrims entered this district. It was of a fatal type; seven died out of ten attacked there on the 19th; every one attacked on the 22nd, 23rd, 24th, 25th and 27th died; all were pilgrims. Thus out of 16 pilgrims attacked, 13 died. After the 29th of May no one died at Galaoti, though nine cases have since been reported as attacked. This proves that the pilgrims returning from Hurdwar through this district were largely infected with cholera of a fatal type. The proof that they communicated cholera or choleraic disease to numbers of persons is, that after the appearance of cholera among the pilgrims, cholera among the residents of this district made its appearance. But there seems ground for believing that the cholera so conveyed was less deadly, for—firstly, out of hundreds reported to have been attacked, few cases of deaths in comparison occurred; and secondly, despite the number of places in which reported cholera subsequently occurred, the pestilence instead of spreading has daily subsided."

84. Still following a southerly direction the next station is Allyghur, and the main road which traverses Meerut, Boolundshuhur and other districts, the occurrences in which have already been described, passes through it. Dr. Kilkelly thus describes what occurred:—"The first case of cholera that is known to have occurred in this district occurred on the 20th April. A cart man who had come from a village about 10 miles distant, was attacked by cholera in the Coel market place and died after a few hours' illness. He had not been to Hurdwar, nor had any of his relations or neighbours been there, and no cases of cholera had previously occurred in the village from which he came. On the 23rd and 24th two more cases of cholera occurred in Coel; neither of the parties attacked had been to Hurdwar, nor had they associated with persons coming from Hurdwar or from any other infected locality. On the same dates reports were received of the appearance of cholera at Somna, a Police station 14 miles distant from Allyghur on the Delhi Road. Two cases occurred there on the 23rd, one case occurred on the 26th, one case on the 27th, one on the 28th, and one case on the 30th.

All the persons who suffered at Somna had been to Hurdwar or had travelled with pilgrims who were returning from Hurdwar and who afterwards had cholera. It thus appears," he continues, "that from the 20th to the 30th April 20 persons had cholera in the Allyghur district, and that 7 of them had either been to the Hurdwar Fair, or had travelled with returning pilgrims. In the 15 remaining cases of cholera, the sufferers stated that they had not been exposed to any infection, but it is a remarkable fact that all the localities at which cholera appeared, lie either on, or close to, frequented lines of communication. Cholera cannot be directly traced into the villages of Jawan and Akrabad, but as both the villages lie within a mile of the Ganges Canal, it is more than probable that communication was held between the villages and some of the bands of pilgrims that halted at the different ghâts on the banks of the canal."

Dr. Kilkelly thus sums up :—"From the facts stated it appears to me clear that the disease was introduced into many places and extensively propagated through the medium of pilgrims, but it also appears to me to be equally clear that in many other places the disease originated, as it does in ordinary cholera seasons, without any assignable cause." The records show that in this district during April there were 22 cases and 14 deaths, in May 538 cases and 139 deaths, and in June 71 cases and 29 deaths, making a total of 631 cases and 182 deaths. Among 450 sepoy's there was but one case and that occurred in April. The only prisoner who suffered was not attacked till December.

85. Reserving the history of the epidemic in the other districts of the Agra division to be detailed hereafter, in connection with the distribution of cholera in Oude, and other parts of the country in which no connection between the Hurdwar pilgrims and the appearance of the disease is traceable, the extension of the epidemic throughout the Punjab will now be considered. The evidence regarding its progress in this province is remarkably full and replete with interesting facts. Although other districts, such as Kurnaul and Umballa, lie nearer to Hurdwar, it will be the most convenient arrangement to commence with the most southern portion and to travel regularly upwards from this point to the north and north-west.

86. The most southern district of the Punjab is Goorgaon. The Civil Surgeon, Dr. Birch, states that "the pilgrims began to enter this district in large numbers on the 21st April and on that day the commencement of the epidemic dates." This statement, however, is qualified by the addition that between the 1st March and 21st April there had been three doubtful cases. When the pilgrims first arrived they suffered much more than others, but after a time the disproportion ceased. The following individual examples which appear to support the theory of contagion are thus given :—"The first case that occurred in the village of Bussyee (which afterwards suffered very severely) was that of a girl, a non-pilgrim, but she lived in the house of a Bunnea who had recently returned from

Hurdwar. The village of Dhoolkote is inhabited by Mahomedans, and is situated between two Hindoo villages (about one mile from each) both of which at the time of my visit (May 13th) were suffering severely, whilst Dhoolkote was quite free from the disease, but in addition to its being a Mahomedan village it had the advantage of being some little distance removed from any large road."

87. There is some discrepancy as to the date of the first case appearing in the Delhi district. In the general summary of Cholera in the Delhi district. the epidemic in the Punjab, which has been prepared by Drs. Smith and Dallas, it is said to have occurred on the 17th April. The Civil Surgeon, Dr. Taylor, reports;—"some cases had been seen at Delhi on the 19th and on the 15th, but they were all pilgrims." About that time the disease became epidemic and lasted with severity till the 20th June. The total number of cases in the Delhi district was 2,590, and the deaths 1,436.

88. The opinions of the medical and district officers as to the origin of the epidemic are very emphatically stated. Opinion as to its origin. Dr. Adam Taylor writes—"I have not the remotest doubt that the disease was imported solely by pilgrims, and my reasons for this belief are the following.—The disease was not known until the pilgrims had returned; not a case had occurred either in the city or district since the commencement of the year. It had certainly appeared in November 1866, after the Agra durbar, but if it had been dormant during the cold weather it would have appeared earlier than the 19th April. The first cases were among Hindoos; this was especially marked in the city, where of 11 deaths registered from cholera in April only one was of a Mahomedan. The cholera chose as its seat the country through which the pilgrims passed. A map of the district has been prepared by the Deputy Commissioner's orders in which the affected villages are marked. These are all along the lines of the march of pilgrims returning by the ghâts, and a triangular space, which had the river Jumna for its base and these lines for its two sides, escaped almost completely. The police and railway officials whose duties carried them among the masses of returning pilgrims suffered much more in proportion than the rest of the community." In this opinion the Deputy Commissioner fully concurs. He considers the introduction of the disease into the Delhi district by the returning pilgrims as established "beyond the slightest shadow of a doubt." He states "that there was no cholera before the return of the pilgrims, that large masses of returning pilgrims, while moving towards their homes, were found to have cholera among them, that cholera commenced to show itself in towns and villages directly after the return of the pilgrims, and chiefly along those routes where the largest bodies of pilgrims passed."

89. Among the prisoners there was not a single case of cholera throughout the year. In the Native Regiment there was but one which occurred in the month of June, and of the European soldiers also only one was attacked. This was in the month of April. Immunity of the prisoners and troops.

90. Dr. Penny, during whose absence Dr. Adam Taylor was officiating as Civil Surgeon of Delhi, mentions some further facts of interest. He states that in his opinion the cholera which appeared in the city in the end of 1866 was not traceable, as was supposed, to the Agra Durbar, but had been imported by pilgrims returning from the Goormooktesur Fair in the neighbourhood of Meerut. "In 1865," he says, "cholera was brought into Delhi by pilgrims returning from the same fair." News of the outbreak at Hurdwar reached Delhi by telegraph on the morning of the 14th April, and at the same time the child of a Eurasian, who had arrived by train from Allahabad the previous day, died of cholera. The case is mentioned of a man who left Hurdwar on the 9th April well, and arriving at Delhi on the 14th of that month, was immediately seized with cholera.

91. The Rohtuck district lies immediately to the north-west of Delhi and somewhat nearer to Hurdwar. For three years this district had been free from the disease, when on the 13th April a supposed case occurred in the village of Mudeena in the person of a pilgrim returning from Hurdwar. An undoubted case was seen among the pilgrims on the morning of the 20th. Dr. Dickson expresses his belief that this was the date on which cholera was imported into the district. On the morning of the 25th the first residents are believed to have been attacked. The Deputy Commissioner states—"I have not the shadow of a doubt that cholera was introduced by the pilgrims. In proof of this I may mention that Gohana, the first pergunnah they passed through, was the first pergunnah attacked, and Jhugger, the last they passed through, was the last attacked. Further in every tehseel the pilgrims were the first victims."

92. In the Hissar district the first case of cholera is believed to have occurred on the 20th April. It was then rife among the returning pilgrims. The medical officer, Mr. Minas, expresses his opinion that "through them it was imported and communicated to the other residents." The Deputy Commissioner also states that there was not a single case of cholera in the district until the arrival of the pilgrims. At the commencement it was distinctly traced along their route, first appearing among the pilgrims, then seizing the residents, then spreading gradually to the neighbouring villages, and "eventually flitting about from place to place miles apart suddenly and capriciously."

93. In the Sirsa district, which lies to the west of Hissar, the disease appeared on the 22nd April, with the return of the pilgrims from Hurdwar. It ceased about the end of July, having attacked 1,323 persons, of whom 612 died. The medical officer, Mr. Nulty, is of opinion that as the pilgrims distributed themselves over the district and dropped numbers at their several homes, they disseminated the dire disease. The Deputy Commissioner is "convinced that there was no cholera among the population of the district till the pilgrims introduced the disease." "They were for the most part it struck me," he says "diseased and unhealthy in appearance; many parties were composed chiefly of aged and emaciated women

and sickly children, and old and tottering men who seemed quite exhausted from fatigue."

94. The district of Kurnaul lies immediately to the west of Seharunpore.

The epidemic in the Kurnaul district. The history of the epidemic in this part of the country has been carefully recorded by Dr. Newton.

The first reliable case of cholera occurred on the 16th April; previous to that the district had been quite healthy, but on the date in question the disease was reported to have been brought into the village of Chajpore by the pilgrims returning from Hurdwar. This village is on the direct line of route from the fair. On the 18th another case occurred five miles from Kurnaul, and from these points it spread to almost every village in the district; at first confined to the pilgrims, but soon attacking others also. Up to the 8th May, 1,442 cases and 794 deaths had been reported. Of these 743 were pilgrims, and 699 among those who had not been to the fair. Up to the 19th June, 1,755 persons had been attacked, and 982 died.

95. The occurrences attending the appearance of the disease in the city

The importation of cholera into Kurnaul. of Kurnaul are particularly circumstantial, and in Dr. Newton's opinion prove beyond all doubt its importation by the pilgrims. "All or almost all the pilgrims (some 500 or 600)," he says, "reached the city on the 18th April in a body, four of their party having been attacked, and two died at Roorkee. One of their party fell sick and died of cholera on the noon of the 15th, the day they left Hurdwar—a sweetmeat-maker whose house is near to Ram Ruttan and Mancer Khan's. Three of their number, viz., the daughter of Ram Ruttan, a Moonshee in the office of Deputy Commissioner, Mancer Khan, a durzie, and thirdly, Ram Lall, all fell sick at a place named Gungoah, in the Saharunpore district, after eating their dinner at night (12 midnight) on the 17th or two days after the first case. They became frightened, and although having only just finished the day's march, off they started for Kurnaul; on reaching the Jumna at the Begi Ghât, they became worse, vomiting and purging commenced. This made them hurry on all the more for Kurnaul, but one of their party, viz., Ram Lall, succumbed at a village named Baboo Keiree, about five miles from Kurnaul; the other two reached the city about 8 o'clock on the morning of the 18th with the rest of the pilgrims; they immediately came under dispensary treatment, and eventually recovered. In the mean time the returned pilgrims all settled in their own different streets. The next case in the city, that of Kungeh, did not occur until the 21st or three whole days after the return of the pilgrims into the city. Kungeh did not go to Hurdwar, but his relatives did; he shared the half of a house with another who returned with the pilgrims; they were constantly together; the pilgrim remained well, but Kungeh was attacked with cholera and died. Again, from the village of Phoosghur seven or eight people went to the fair and left Hurdwar on the 14th. They took the same route as the Kurnaul pilgrims, excepting instead of halting at Gungoah, they went close to the village of Lucknoutee, and there one of their women was taken ill and died; they arrived at Phoosghur on the 17th, when all of them remaining well until the 22nd, the woman's husband took ill and died."

96. The district of Umballa joins that of Kurnaul, and also forms the north-west boundary of the district of Seharunpore. Cholera in the Umballa district.

Two cases are noted as having occurred in the city on the 13th April,—one a pilgrim, the other a man who had not been to Hurdwar. Until the 18th no new case is recorded. In that month in the district 1,651 cases are entered and 996 deaths. In May there were 2,032 cases and 1,044 deaths. In June 335 deaths, and in July 152. Of the casualties in April 671 or more than two-thirds were pilgrims.

97. The Civil Surgeon, Dr. Bateson, who was indefatigable in carrying out arrangements for the comfort of the pilgrims, and superintending the measures which had been resolved on for preventing the spread of the disease, has no doubt that it was imported. "I am positive," he says, "that cholera was introduced into the Umballa district by the pilgrims. We had been perfectly free of the disease until they arrived, and in almost every affected village that I visited I was able to trace the outbreak to the return of residents who had been to Hurdwar, and who were attacked with it after their return." In one remarkable instance it would appear to have been brought by a healthy person. The circumstances are thus graphically described:—"Within a mile of the Umballa Civil Cutcherry is a small village of some 170 to 200 inhabitants, all Jāt peasants. The name of the village is Singhawara. In this place Singhawara, forty years ago, there were seven deaths in one night from cholera; the inhabitants there and then deserted, and the disease stopped. Eleven years ago in the rainy season, cholera attacked the villagers and kept among them for three days, but the most deaths were within the first few hours after the outbreak. They deserted their village, but this time it did not quite stop, a case occurred at intervals of hours for three days, when it ceased. For a year up to Sunday, the 30th July 1867, there had not been a death in the village and the last death not of cholera. On Saturday night, the 29th, every body was as well as usual to all appearances; the village daily routine had been attended to as usual; then came the 30th, a black Sunday to these Singhawara peasants. I now quote from my M S S., taken at the village itself. 30th June—Chotoo, a boy aet 7, taken ill 6 A. M., died 4 P. M., cholera. Then, in a house which is just opposite across the way, Kanoo (2), a girl 10 years old, was playing about at 1 o'clock, and in evening dead, cholera. A little further on from this house or hut, Hurree (3), aet 25, taken ill morning, dead evening. Dhuleepa (4), aet 10, taken ill noon, dead 4 P. M. Rooldoo (5), aet 30, taken ill noon 30th, died 3 A. M. July 1st. Nundoo (6), boy, aet 9, taken ill evening, died sunrise July 1st. Uttroo (7), aet 4, ill in night, died 10 A. M. July 1st. Nurayana (8), ill at 8 P. M. 30th, died forenoon July 1st. Kurma (9th case), wife of Hurroo, taken ill in night, very bad—better July 2nd. Koroo (10), child, taken ill 30th—better. I saw Kurma and Koroo. On 1st July, the villagers fled, deserted their village, and scattered themselves over the neighbouring fields, where I found them. This small community experienced 10 cases and 8 deaths in the time I have stated. On the evening of the 30th, the lumberdar of this village ran off with his family to another not far off (Toorkhra). His son,

aet 11, was seized with cholera, 1st July and died that night. I saw him dead. Toorkhra village kept free. Since July 1st there has been but one fresh case, a child, and he is doing well. On the 3rd of July, a heavy storm of rain came on ; all the people of Singhawara went back into their village, and although this step was a cause just at the time of some anxiety to me, yet no more cholera showed itself. Thus, here at Singhawara was a blaze, a burst out of the disease. One person from this village went to Hurdwar and he died there ; the villagers heard of his death from a returning pilgrim commissioned by the dying man to deliver the message at Singhawara. I am assured that he did not stop. 'He passed through and told us.' This village is off the line of traffic. No marriage procession had come to or gone from it for a long time. 'As after the first rain eleven years ago we had this burst-out ; and now, we have had another blaze out after the first rain,' the old men of the village told me. The immediate neighbouring villages kept untainted."

98. The cantonment of Umballa is situated immediately on the Grand Trunk Road, by which the great mass of pilgrims returning northwards travelled. Measures were adopted to divert the stream, but before the arrangement could be carried into effect many had already passed. On the 19th April the first case occurred in cantonments. The subject was a prostitute belonging to the 94th Regiment bazaar, which is within a hundred yards of the Grand Trunk Road. She died after 5½ hours' illness. On the 20th another death from cholera occurred, and a third on the 21st.

99. The above facts are taken from the very interesting and able report of Dr. Munro, the Deputy Inspector General of Her Majesty's British Forces at Umballa, from which also the following particulars are extracted. "On the 22nd," he writes, "two Europeans were seized with cholera,—one a man of the 11th Regiment on his way down country from Sunawur,—this man had crossed the line of pilgrims ; the other belonged to the 94th Regiment, and had been in company with the first man during the whole day before that on which he was taken ill." Both of them died. On the morning of the 23rd, 20 cases of cholera were reported to have occurred in the 94th bazaar during the previous night. The place was accordingly vacated and the inhabitants sent into camp ; the same evening an officer of the 94th and the wife of a soldier were seized, and as two of the medical officers also showed suspicious symptoms, the regiment moved that night into camp about three miles from cantonments. No more cases occurred till the 26th, when a patient in hospital was seized. The regiment then changed ground. From that date to the 7th May there were 13 cases in camp, and one in quarters amongst the women. The regiment was then broken up into three divisions, and separately encamped some miles apart. The women and children likewise were removed from cantonments to a rest-house along the Grand Trunk Road about 12 miles off. These measures proved very beneficial. No more cholera occurred in the more distant camps, but the head quarters camp suffered a good deal from bowel complaints, and had to change ground in consequence. The other detachments also changed ground

as a precautionary measure, and on the 19th May they all returned to quarters without having suffered in the least from exposure, though one fatal case occurred after return to cantonments. The heat was very great. As the villages all round cantonments were tainted, and as the ordinary cholera encampments to the north of the station had previously been occupied by pilgrims, much difficulty was experienced in securing suitable ground. That to the south had to be taken up though very unsuited for the purpose. The bazaar likewise suffered a good deal in camp. From the 28rd April, the date of being turned out, to the 8th May, there were 36 cases and 21 deaths. The camp was shifted further off, and as the disease soon disappeared, the people were permitted to return to cantonments. The Royal Horse Artillery, occupying the barracks on the extreme right of the European lines, furthest removed from the Grand Trunk Road, had but one fatal case amongst them on the 2nd May. Otherwise the health of the Artillery was good throughout. The 21st Hussars had hitherto escaped, but on the 4th May two fatal cases occurred in the bazaar of the regiment, and another case two days subsequently. A woman of the regiment was the first European seized. She died on the 9th May after an illness of 11 hours. On the 13th, 16th and 19th there were three more cases, only one of which proved fatal. These were the only cases at that time in the 21st Hussars. The bazaar continued to suffer a good deal till the end of the month, and then the disease disappeared for a time.

100. The Native Regiments preserved complete immunity from the disease during the whole of the month of May. **Cholera among the Native troops.** Previous to the outbreak in the 31st Native Infantry, the medical officer states that there was a great increase of diarrhoea and colic, which he attributes to bad quality of water. "The water supply by aqueducts having failed, the men were driven to drink from wells with little water in them, and after two or three *mussucks* being drawn, the remainder was quite thick with mud." He noticed the same liability to bowel complaints on a former occasion when the water supply was scanty. The first case occurred on the evening of the 3rd June, and from that date to the 10th there were in all seven cases (including one tent lascar) and three deaths. The affected companies were at once moved into camp, and the disease appears to have been timely checked. The lines of the 31st Regiment Native Infantry adjoin the Grand Trunk Road and are immediately opposite to the European Infantry Barracks. The 11th Bengal Cavalry, whose lines are on the extreme right of the station, escaped cholera entirely, but there were one or two cases in the Regimental Bazaar at a subsequent period.

101. Cholera ceased as an epidemic in the district towards the end of July ; the station had been free from it for some weeks, **Second outbreak in cantonments.** when suddenly about this time seven or eight cases occurred in one day amongst the commissariat cattle servants located behind the Sudder Bazaar. They were immediately turned out and isolated in tents for 10 days, when they were allowed to return, no further cases having occurred. From the date of this second outbreak, however, scarcely a day passed without one or more cases in the Sudder Bazaar, the Regimental Bazaars being exempt. About the middle of August, some villages close

to cantonments suddenly became affected, and towards the close of the month the cases in the Sudder Bazaar became more numerous. On the 13th September, the disease again appeared in the Regimental Bazaars and at the same time attacked Europeans. Dr. David Scott, medical store-keeper, who had been ailing for some time previously, was seized on that date; there were no more cases till the 22nd September, when two soldiers of the 21st Hussars were attacked. These three were the last and only cases amongst the European Garrison of Umballa during the second outbreak of cholera. The Regimental Bazaars were not entirely exempt from the disease till the end of September.

102. The Umballa Jails, with a population of 487 prisoners, remained unaffected throughout, although they are in close proximity to the city; strict quarantine was enforced.

The Umballa Jails escape.

103. Large numbers went from all the hill sanatoria and neighbouring Native States to Hurdwar, and returned *via* Kalka to their homes. Cholera broke out in this village about the 18th April, immediately on the arrival of the pilgrims, amongst whom it is reported the disease was then very prevalent. The dead and dying men were left on the roads leading up to the foot of the hills, and in Kalka itself, as well as along the roads to Kussowlie and Dhurmpore, many died uncared for, and were disposed of by the police; a few of the sick who had the necessary means were carried on litters to their homes in the hills. Many passed through Kussowlie, where several cases of cholera immediately afterwards occurred in the Sudder and Regimental bazaars. In May there were but four cases and two deaths in Kussowlie, and in June only one case. Early in July it became more prevalent, though it could scarcely be termed epidemic. On the 11th July a soldier of the depôt was attacked by cholera and died, and simultaneously there were several cases in the bazaar and throughout the station. The soldier, however, was the only European victim. After the 15th July, no more cases occurred.

Cholera at Kussowlie.

104. Few of the villages in the neighbouring valleys regarding which its appearance in the hill villages we have any information escaped the visitation, but there were none in which it committed great ravages. The village of Gurkul, midway between the Lawrence Military Asylum and Kussowlie, afforded the first case in this immediate neighbourhood. It occurred on the 25th April. The man was a pilgrim and had just returned from Hurdwar. On the 26th April Dr. Chesnaye reports the first case of cholera in the Lawrence Military Asylum Sunawur, in the person of a native tailor belonging to the boy's school. He had not been to Hurdwar, but several servants of the institution who had gone thither returned to Sunawur on the 24th and 25th April. This case proved fatal on the 27th April. A few more of the institution servants who lived in the adjacent villages were carried off, but that of the 26th April was the solitary case which occurred on the estate itself at that period. Four months afterwards, on the 30th August, the steward of the asylum was attacked, and four days subsequently a little boy, a ward of the institution, who at the time was under treatment in hospital, was seized. Both of these cases were fatal. Great fears were entertained lest the disease should gain a footing at Sunawur, but happily these were the last and only cases.

105. The military station of Dugshale, distant about two miles from Sunawur, and garrisoned by the 104th Regiment (805 strong), was entirely exempt from cholera throughout the year. Two fatal cases were returned by the police on the 17th May, but as there is no mention of them in any report, they probably occurred not in the station but in some village in the neighbourhood. Previous to the 23rd April several pilgrims suffering from cholera were carried along the old road towards Simla. They did not pass through Kussowlie but round it. At Kukkurhutti they were seen and tended by two European women.

106. A woman of the 90th Light Infantry at Subathoo, who, it is stated, had been with pilgrims the day before on the road below the station, was seized with cholera and died on the 23rd April. The hospital *ayah* who attended her was the next victim in the station. Diarrhoea then became prevalent in the regiment, and on the 27th a fatal case of cholera occurred in a soldier. After an interval of one week, during which there was no cholera, two children were seized, one of whom died. A month elapsed before the next case occurred, when on the 3rd June three men of the regiment were admitted to hospital, and simultaneously diarrhoea again became prevalent. During the second and third weeks of June, there were two more cases, and one of choleraic diarrhoea, but towards the end of the month all signs of disease disappeared, and the regiment regained its normal health. This did not long continue, however, for in July diarrhoea assumed an alarming prevalence, though not till the 28th of the month did any case of true cholera appear. On that date a patient in hospital was carried off after a few hours' illness. He had been under treatment for diarrhoea since the 4th July. Numerous cases were reported amongst natives in the bazaar on the same day. From the 28th July to the 5th August, nine cases of cholera (including men, women, children, and natives) occurred in Subathoo, besides a large number of cases of choleraic diarrhoea. There was then a lull for 36 hours, when 13 fresh cases occurred amongst the troops and bazaar population.

107. The Deputy Inspector General of Hospitals British Troops, Umballa Circle, had meantime arrived in the station, and seeing that the malady had taken a firm hold, he recommended the immediate removal of the regiment into camp. It was accordingly divided into five different parties, four of which were encamped in different directions at various distances from each other, so that by the 14th August the station was nearly denuded of troops. The married families and sick in hospital, constituting the fifth party, alone remained, and were segregated in the vacated barracks, chapel, and school-rooms; cases of cholera and choleraic diarrhoea only were treated in hospital. The first party, consisting of two companies, moved to Solon Ridge early on the morning of the 9th. Another party of 48 men had moved into camp on the heights above Subathoo on the 9th. The third party moved to Barrologhee, six miles from Subathoo on the Loodianah Road on the 12th and 13th. The head quarters, consisting of three companies, moved to a ridge of hills four miles east of Subathoo, on the old Solon road, on the 13th and 14th. Dr. Munro believes that the moving into camp of this

regiment was followed by good results. The companies encamped at Solon had no return of the disease after moving out, and those encamped on the Loodianah Road had but one case. The Dhobie Ghaut or fourth party carried one case with them into camp, and two days afterwards, viz., on the 16th August, another case occurred which ended fatally the following day. Ground was at once changed, and the disease disappeared for a time. The party encamped on the heights above Subathoo had two cases amongst them on the 19th. On the 20th they changed ground along the Dhurmpore Road, and thereafter there was no recurrence of cholera. The married families and sick in hospital, who, as already stated, were left behind in the station, remained perfectly free from cholera after changing barracks.

108. During the absence of the 90th Light Infantry from the station of Subathoo, the bazaar, which is a very large one, was thoroughly cleansed and fumigated, and afterwards well aired and white-washed. The people, likewise, were turned out into camp to admit of this being more perfectly accomplished. Despite these precautions, on the 25th August, three cases of cholera occurred in the barracks; one of these a woman just arrived from Simla.

109. After an interval of nearly 15 days, the disease suddenly reappeared amongst the Dhobie Ghaut party on the 29th August. Three cases occurred on that date, all of which proved fatal. Dr. Munro remarks that, "ten days' exemption is supposed to be sufficient time to keep a regiment or party in quarantine, after which time they may safely return to quarters, but here is an instance in which there was complete exemption for 13 days, when cases of as virulent a character occurred as any previously under treatment." This party again changed ground to a distant isolated spot near Solon, on the Subathoo side, after which there was no recurrence of cholera. These were the last cases in the regiment. Communication between camps was restricted for a considerable time, but on the 10th September free communication was permitted. The issue of beer was discontinued for some weeks, and an extra dram of rum given instead.

110. It appears that the 90th Light Infantry were not a healthy body of men on their arrival at Subathoo. While serving in the Peshawur valley, they suffered much from the obstinate fever of that locality, and on the march down country, cases of a typhoid character were numerous, betokening a generally enfeebled state of the corps. Dr. Munro was particularly struck with their anæmic appearance, and directed the daily issue of quinine to the whole regiment. The men seemed to improve so much in general health during their stay in camp, that it was deemed advisable they should remain out till the beginning of the cold weather. They did not, therefore, return to Subathoo till the middle of October, and some companies came later. The barracks had, meantime, been well cleansed and purified, and, so far as practicable, improved.

111. The mortality in the 90th Light Infantry, as shown in the report of the Deputy Inspector General, from the 23rd April to the 13th September—a period of upwards of

Disease chiefly confined to the old barracks.

four months—was 28 out of a total of 62 cases. It is a fact worthy of notice that the disease was chiefly confined to the old barracks, which are badly constructed and badly ventilated. Thirty of the cases occurred in these buildings, four in the old guard-room, four in the camp immediately above the old barracks, and four of those who were seized in camp had occupied these buildings within 24 hours of their being attacked. In the old barracks fourteen of the women and children who suffered resided, and only two in the new barracks; only eight cases of cholera were admitted from the new barracks, and several of choleraic diarrhoea.

112. Cholera broke out in Simla on the 20th April, or about the period when the influx of visitors from the plains was greatest. The disease is said to have been entirely unknown in the sanitarium for at least ten years, and the Civil Surgeon, Dr. Tuson, states as his conviction that the present outbreak was due solely to importation from the plains by pilgrims and others who had come in contact with them on the road. He cites one instance in support of this opinion. A lady with all her servants travelling up to the hills came in contact on the 17th April with a party of pilgrims returning from Hurdwar, amongst whom there were several cases of cholera. Immediately on her arrival at Simla on the 24th April, one of her servants was taken ill with the disease, and others were affected subsequently. There had been only one or two cases in the sanitarium prior to that date. The disease at no time assumed an alarming prevalence in Simla, but as the cases, though comparatively few, were scattered over a considerable period of time, a constant uneasiness, amounting almost to alarm, existed throughout the settlement from the 20th April till about the middle of September, when the disease entirely disappeared. The total number of cases among European residents was sixteen, out of which six proved fatal. It is a curious fact that they were nearly all children. Between the 21st April and 3rd September there were in all 83 admissions and 47 deaths among the native population.

113. The Loodianah district stretches in a westerly direction from the upper part of Umballa. Here the first case occurred on the 18th April. “Not a case of epidemic Asiatic cholera,” writes Dr. Johnston, the Civil Surgeon, “can be traced in the district prior to the advent of the pilgrims. Coincident with their arrival cholera appeared, first a feeble spark scattered here and there, but *pari passu*, augmenting with the returning crowd. There can be no doubt that cholera followed in their wake.” The following instances of importation are then recorded. “Two *Gunga Bashees* attacked with cholera after 48 hours’ quarantine, and a day’s residence at home, infected two males and one female residing in the same mohulla. They were removed to, and died in, the cholera camp. Two bunniahls detailed to provision the encamping ground of Loodianah and Khunnah respectively were attacked and died. An old woman returned from Hurdwar on the 23rd April to Tuckerwall, her native village. On the 24th seven cases were reported. On the 25th I galloped there, and found her still alive. She had been ailing for four days, and circumvented the guard; not a villager

was affected but those who had been attending on, or residing in her house. She lived until the 28th, while the infected seven died to a man on the 25th. A sepoy on permanent guard over the Loodianah Hospital was seized and died in eleven hours; he was a hale and hearty man."

114. To the west of Loodianah is Ferozepore, and here the first case of **Apparent importation into Ferozepore.** cholera was reported on the 22nd April. The Deputy Commissioner, Major P. Maxwell, states "that at first the disease was almost entirely confined to pilgrims, and the cases even among them were not numerous, though usually fatal. Shortly after their passage, however, it made its appearance among the villages in the neighbourhood, and chiefly on the line of the Loodianah Road, a circumstance which leaves little room to doubt that it was derived from the pilgrims. The mortality in these villages has been serious, and I regret to say it is not even now (22nd May) sensibly abating. Shortly after its appearance in the village several cases occurred in the compound of the kutcherry which is situated within cantonments. It there first attacked two police constables of a treasure escort which had just arrived from Loodianah, and shortly afterwards it seized several of the suitors and litigants who were attending in the kutcherry. These cases were very virulent, and nearly all, I believe, terminated fatally. From the kutcherry compound the disease gave unmistakable symptoms of spreading in the cantonment by the appearance of some cases in adjoining compounds."

115. There is some discrepancy as to the date of the first case, but this is immaterial, as in both instances the sufferer appears **Opinion of the Civil Surgeon.** to have imported the disease. The Civil Surgeon Dr. Williams reports that the first case of cholera in the city of Ferozepore occurred on the 24th April "in the person of an inhabitant named Gunga Doss, who had not been to Hurdwar, but had returned from Jullundur *via* Loodianah on the evening of the 23rd in a dâk carriage in company with four pilgrims. Next morning at 6 o'clock he was seized with cholera." Dr. Williams is of opinion that the case of Gunga Doss is a fact capable, as far as possible, of proving beyond all doubt that the disease was due to importation by the pilgrims. "The first case in cantonments," he adds, "on the 24th April was that of a pilgrim woman who had returned from Hurdwar. The first reported fatal case in Ghull, where the disease is still prevalent (26th May), was a returned pilgrim."

116. Cholera prevailed in the villages surrounding the Ferozepore cantonment for about two months before it broke **The epidemic in the Ferozepore cantonment.** out in the European garrison of that station. Dr. Jephson states that "strict quarantine appears to have kept it off for a long time." The 15th Native Infantry was the first corps affected, and a few cases appeared amongst them in the early part of June. The infected company was promptly moved into camp, and cholera thereupon disappeared. The 1-5th Fusiliers are reported to have suffered from heat apoplexy for some time prior to the appearance of cholera; otherwise the general health of the regiment was good. The weather had been for some days oppressively warm, the evenings and nights especially being close and stifling. On the 27th June the first

cases, two in number, occurred, both proving speedily fatal. The following day there was another case. The affected barrack was evacuated in the evening, and all the men moved into camp. The women and children from Nos. 30 and 31, in the former of which a second case had occurred, were transferred on the 29th June to the old mess-house of the 15th Native Infantry. There were two more cases on the afternoon of the 3rd of July, and the entire regiment marched into camp on the following day, the head quarters wing to Khai, and the left wing to Vellour. A detachment was also encamped on the race-course, and there was besides a company on duty in the fort. There was but one case in camp two days after moving out. The women and children were moved into camp at "Honeymoon Lodge" on the morning of the 5th July. Three cases occurred there on the 6th July, two of which recovered, and these were the last amongst the detachments outside cantonments. A child of the Sergeant Major died subsequently in an officer's house in the station. The whole regiment returned to quarters about the end of July, having had in all 16 cases, 12 of which ended fatally. Dr. Tippitts, the Surgeon of the Fusiliers, remarks on the two epidemics that "in none of the cases of cholera was there premonitory diarrhoea to any extent. All the men who were attacked died, and they were all well conducted healthy temperate men. Of the seven women attacked, four were pregnant, and they all died;" none of the patients in hospital caught the disease.

117. Of the history of the epidemic in the Jullundur district a very excellent account has been given by the Civil Surgeon Dr. Verchere. "The first case of cholera," he says, "which occurred in the neighbourhood of cantonments, was that of Heera, a fakcer (beggar) returning from Hurdwar in an ekha (a native one-horse vehicle). He had been ill nearly three days when he arrived at the Khajoorla Chowkey (police station). He was first attacked one march east of Loodianah. At Loodianah he obtained some medicine and continued his journey; he arrived at the Khajoorla station at 6 A. M., 19th April, in a state of deep collapse." On the 19th and 20th, before quarantine was established, 100 pilgrims are supposed to have entered the city. Only six cases occurred there, and all were, "with one exception, traced to direct communication with the pilgrims or with travellers coming from infected spots." The measures to which these successful results are attributed will hereafter be noted.

118. Dr. Verchere expresses his opinion that a careful enquiry into all the details of the appearance of the disease at Jullundur "will convince most enquirers that cholera is communicable by carts, wagons, &c., which have travelled along an infected road or halted at infected halting grounds." Several instances are cited in which the persons attacked appeared to have been infected by visiting the quarantine camp. The following narrative is of interest, as the Civil Surgeon believes that "little doubt can be entertained that cholera was communicated in this case by the cart. Only one case occurred in cantonment, viz., Gaiinda bheestie. He was taken ill on the 8th May at about 5 P. M., and died at 6 A. M. next day. He never received any

The disease in the Jullundur district.

Illustrations of apparent communication of the disease.

medicine, and never was seen by either medical officer or *bazaar hakeem*; but from the appearance of the body, which I saw a few minutes after death, and from the symptoms which the man is said to have had during his illness, *viz.*, watery vomiting and purging, the vomit and the stools being alike, the corpse-like coldness of the skin, the insatiable thirst, the sunken eyes and husky voice, there can be no doubt of Gaimda having died of cholera. This was therefore one of those singular cases of cholera occurring in the middle of a crowded neighbourhood perfectly healthy, without any relation to the infected pilgrims, the patient not having gone out of cantonments for months, knowing no pilgrims or pilgrims' friends, and neither his master or any of his master's servants being pilgrims or having been in any way connected with pilgrims. Patient investigation, however, proved that the case was after all but one of communication of the disease. On examining carefully all the houses around the *bheestie's* dwelling, and questioning the inhabitants thereof, I could elicit nothing until I came to a godown belonging to Ram Rusood, contractor, holding commissariat contracts for potatoes and other articles. Some of the potatoes were told me to be 'the new potatoes' by one of the godown servants, and after a great deal of prevaricating it was admitted that these potatoes had been brought in on a cart the day before. I happened to know a good deal about these potatoes; five carts had arrived at the Dokoha Serai on the 5th May, and three more at the Beyn Bridge on the 6th.* I had seen the three carts at the Beer Chowkey, where they had been detained two days by a mistake, and ordered them to go to the serai. On the morning of the 7th, I had seen some of the carts at the serai, and noticed how dirty they were, my attention being called to them by the swarm of flies which formed quite a cloud over some of the carts. By questioning the drivers it came out that, as the three last carts were being taken from the beyn to the serai, a bunniah met them near the cavalry picket and then produced a *rawanah* from the Executive Commissariat Officer, requesting that the carts be not detained. I subsequently obtained the *rawanah* from the duffadar in command of the picket, and it was, I believe, merely the usual *rawanah* given to government servants travelling for government purposes. The duffadar, however, allowed one of the carts to proceed at once to cantonments, without going to the Dokoha Serai, but taking a kutchra road or track which leads from the picket direct to cantonments. The drivers were kept back, but the clothing, sacking, boosa-bags, blankets, &c., were not removed. The cart left the picket at 4 P. M., and must have arrived in the bazaar at about 6 P. M., probably too late to unload that day, and was, either loaded or unloaded, left in the lane in front of the godowns until the 8th of May. Now this lane is so narrow that the cart nearly completely blocked up the way, and at the same time the door into the *bheestie's* house."

119. While cholera was raging in towns and villages of the Jullundur district the European garrison in cantonments troops in Jullundur. was quite exempt from the disease. After it had well nigh exhausted itself in the district, it made its appearance in Her

* These carts came from Kurnaul, and had therefore travelled along the Grand Trunk Road at the time it was thronged by the pilgrims.

Majesty's 82nd Regiment. On the 3rd September, the first case is recorded as having occurred in the medical subordinates' quarters of the Regimental Hospital, and in the afternoon of the same day, in the hospital itself and in No. 12 married quarters. On the following day these buildings were vacated and the patients and families encamped outside cantonments. On the 5th a woman from No. 12 barrack and a man from No. 6 barrack were seized; the company occupying the latter were at once sent to join the infected camp, and the rest of the regiment with the families from No. 19 barrack were moved into a separate camp. No cases of cholera occurred in this party either previous or subsequent to leaving cantonments. It was considered prudent to change ground twice however, owing to the insanitary nature of the neighbourhood. These moves were made at right angles to each other.

120. Owing to scarcity of tent accommodation in the head quarters party, two companies returned to cantonments on the 12th September, and were located in the barracks furthest from those in which cholera had occurred. No evil consequences followed this movement; indeed Dr. Munro, the Deputy Inspector General, reports that it was attended with benefit, in so far as it afforded "space and comfort." The infected camp had no cases of cholera from the evening of the 5th till the morning of the 12th September. They changed ground to the south-west on the 9th, and again on the 11th, as a precautionary measure. On the 12th three cases occurred, and a movement was at once made in a north-west direction. Here six more cases occurred, and on the 15th September the party moved again, and were kept moving short distances every second day in the same direction till the 2nd October, "when having been nineteen days without fresh cases the whole returned to quarters." The families of No. 11 barrack, which had gone into camp with the head quarters party, returned with the two companies already noticed to cantonments on the 12th September. On the 14th and 15th idem, two cases of cholera occurred among them. No tents were available, so they were put into an empty barrack, but another case having occurred on the 17th, and tents having in the mean time arrived from Ferozepore, the party went into camp about three miles south-west of the cantonments. A case of choleraic diarrhoea is reported to have occurred on the 20th September, and this was the last of the kind amongst the European garrison. Dr. Munro remarks that the disease "was confined throughout chiefly to those persons occupying buildings in which it first appeared." The hospital compound furnished the first case, and Dr. Munro observes that "in the neighbourhood of the hospital is a large tank on one side; on the other, close to the building, one of the large surface drains of the station, and report says, I know not how truly, that the hospital stands where an old tank formerly was, which had been filled up with earth taken from a Mahomedan burial ground, close to where formerly stood a village in which cholera frequently occurred."

121. Kangra, the hill district which adjoins Jullundur, has furnished no special report; but from the general account of the epidemic in the Punjab it appears that the disease spread over the district and attacked both the civil station and jail of Dhurm,

Cholera in the Kangra district.

sala. The Deputy Commissioner Major Paske states that "cholera had not been heard of until the returning pilgrims began to appear, and for some days all the cases reported were confined to the pilgrims. I think too it will be found," he adds, "at least such is the result of my own observation, that returning pilgrims have passed through, or have remained in every locality where the disease has appeared."

122. Among the prisoners, 14 cases of cholera occurred, and of these seven were fatal. On the night of the 6th May, the first seizure took place, and a second on the morning of the 7th. On the 28th June the last case occurred. Before any of the prisoners had been attacked, on the 5th one of the police guard had been taken ill with cholera, and although every precaution was at once adopted, Dr. Warburton expresses his opinion that the outbreak "appears in some way, either directly or indirectly, to owe its introduction to the police."

123. Among the European troops, numbering about 100, there was one admission and one death from cholera in July. Out of a strength of between 6 and 700 Native soldiers, there were three cases in May, all of which proved fatal.

124. In the district of Hooshiarpore, which lies to the north-east of Jullundur, Mr. Barnes, the medical officer, states—
Particulars regarding the Hooshiarpore district. "the first case of cholera that occurred was reported on the 19th April. This was one of the pilgrims returning from Hurdwar, who had just entered the district. It cannot be doubted," he adds, "that the disease was imported by the pilgrims, as it made its appearance along the route taken by them, whereas at the Thannah of Tanda, through which pilgrims did not pass, not a single case occurred." Considering the large body of pilgrims that passed through the district by two parallel routes, the disease did not prevail to any great extent.

125. In the Umritsur district there was no appearance of the disease prior to the pilgrims reaching it. "The first case of cholera in the city," writes Dr. Henderson, the Civil Surgeon, "was reported to me at 11 A. M. April 22nd. I at once went to the serai and found the patient in collapse. He had just arrived after a march of 30 miles and was at once attacked with cholera."

126. The European troops in the Fort of Govindghur were exempt from cholera for a long time after its first appearance in the city of Umritsur, from which it is separated by a distance of only a few hundred yards. Every precaution was taken to prevent communication between the inhabitants and troops. On the 4th August, however, a woman, the only woman in the Fort, the wife of a private in the detachment 38th Foot, was attacked and died. Nearly one month elapsed before another case occurred, when on the 2nd September a man of the detachment was seized. This case proved fatal on the 4th September, and was the last.

127. In the Goordaspore district "the first cases," writes Dr. Oldham "occurred on the 25th April among pilgrims returning from Hurdwar, of whom great numbers passed along the roads leading towards Bassowlie and neighbouring ferries on the Ravee. At first all those attacked were pilgrims, then some of the kahars employed in carrying doolies containing people returning from Hurdwar, some of whom are reported to have had cholera and to have been hurried on by their friends to avoid detention. The disease gradually spread to the villages along the roads, and then cases occurred in those more remote, as people belonging to them returned from Hurdwar. Many of the cases afterwards occurring could be traced to contact with pilgrims. The whole history of the epidemic in this district," he adds, "shows the disease to be propagated by contagion; it appeared with the pilgrims and was at first confined to them, spreading first to the villages along their lines of route, and finally to others more remote, appearing in no place in which there had not been some communication with pilgrims, direct or indirect, and in several cases people who had not left their villages were attacked, after attending upon relatives who arrived sick from Hurdwar."

128. The first case of the disease in the Sealkote district is reported to have occurred on the 20th April; "soon after the arrival of the pilgrims from Hurdwar." Many interesting particulars regarding the epidemic have been supplied by the Sub-Assistant Surgeon, Bhoobun Mohun Mitter. "At Secranwallce, a town nearly 22 miles south of Sealkote, a pilgrim by stealth returned home while he was suffering from this disease, and died within a short time after his arrival; the son and daughter of the *hakeem* who treated him got the disease on the 7th May 1867, three days after the return of the above pilgrim, and died within 24 hours. At Bhodewalla (a village nearly 21 miles from Sealkote) the disease was brought by a man who came to this village on the 21st June 1867 from Dalowalee (a village in the Goojranwalla district) where the disease was prevailing with great virulence. He was seized with purging and other symptoms of cholera on the 25th June 1867, and died within 48 hours. Fifty-six persons became affected, of whom 27 died, and the rest recovered, the disease continuing till 28th July 1867. The disease appeared in more than 40 villages, and the cause of outbreak in each of these localities was reported to be direct or indirect communication with the pilgrims."

129. In the Lahore district the first case occurred on the 24th April. With regard to its origin the Deputy Commissioner thus writes:—"There is in my opinion no positive *proof*, though strong presumptive evidence, of the disease having been introduced by the pilgrims. The earliest cases certainly occurred among the pilgrims, and the disease did not appear at all until the stream of pilgrims began to pass through the district." The very first case that occurred was in the city of Lahore; the patient was a child, son of "Chooley," resident near the Shalmen Ghât, who had returned with his family from Hurdwar on the 21st April. In the village of Lahari Hetoo, nine miles west of Kussow, where on the 30th and

21st May fourteen cases occurred, of which six were fatal, it was ascertained that one pilgrim had visited the village, but he was in good health, and the virulence of the outbreak was probably owing to the filthy state of the village. The opinion of the Civil Surgeon, Dr. Smith, is given in the general conclusions of the Punjab Cholera Report, and is to the effect—"That cholera is conveyed in the first instance by human agency alone."

130. The cantonment of Mean Meer is five miles from the city of Lahore. Dr. Jephson, Deputy Inspector General British Forces, Lahore Circle, states that the epidemic first appeared in the 106th Regiment on the night of the 26th May, when a man, presenting suspicious symptoms, was brought into hospital under observation. True cholera speedily became developed, and the case proved fatal on the morning of the 27th May. On this date a second case was brought in from a different barrack, and later in the day a third case from another barrack. The companies to which these cases belonged were despatched by rail that evening to the district barracks at Hullokee, on the Mooltan Line of Railway, distant 12 miles. On the morning of the 28th a fourth case occurred, so it was resolved to move four more companies into these barracks and into those of Ammursiddoo, about $4\frac{1}{2}$ miles down the line from Mean Meer. On arrival at the latter place a fifth case occurred. The remaining four companies of the 106th Regiment, together with convalescents and sick which were able to be moved, were sent out to camp at Burkee, about 10 miles south of cantonments. The married families and sick in hospital remained with the regimental head quarters at Meean Meer. From the 28th May till the 8th June there was no recurrence of cholera either in cantonments or camp. On the latter date it reappeared in the Burkee Detachment, and two other cases following on the 9th June, the detachment changed ground. On the 10th there were three more cases, and the detachment was split into two parties,—one being sent to Hullokee, the other to Ammursiddoo District Barracks. These were then both empty, as the companies which first occupied them had in the meantime returned to cantonments. On the 11th and 13th June there occurred two other cases, which were the last at this period of the epidemic. The Burkee Detachment returned to cantonments on the 20th June, having been absent about three weeks, during which time eight cases of cholera occurred, six of which were fatal. Assistant Surgeon Ffolliot reports that the worst features of the first outbreak of cholera were the rapidity with which it commenced, the fatality of the first three cases though they came from different barracks, and the absence of premonitory warnings.

131. A week after the return of the last detachment to quarters, *viz.*, on the 28th June, a man of the 106th was admitted with suspicious premonitory symptoms, which were soon declared to be those of true cholera. On the 30th June there was another case, and on the 1st July three more, all of which proved fatal. The regiment was at once ordered out of cantonments in four detachments. The first party, strength 180, left by rail for Hullokee temporary barracks. On the evening of the 1st July, the second party, strength 203, marched for Ammursiddoo temporary barracks. On the morning of the 2nd July, the third and the largest party, strength 267, marched at the same time

for Shahdrah, on the other side of the river Ravee; and the fourth, consisting of the married families, went on the evening of the 2nd July into tents at the Shalimar Gardens. The hospital, in which one case had also occurred, was thinned as much as possible, those who were able to be discharged joining their several companies.

132. The Hullokee Detachment had two cases of cholera the day after their arrival; one of these ended fatally. The remainder continued healthy, and as these barracks were required for the Shahdrah Detachment, they returned to their own quarters in cantonments on the 27th July. Cholera had not yet left the station, but Dr. Jephson explains the early return of this detachment, by the unhealthy state of the Shahdrah Companies which required a change, and there were no other barracks available but those at Hullokee. No bad results followed these arrangements, and the health of the returned companies continued unimpaired. The Ammursiddoo Detachment were less fortunate, as on the first day of their arrival two men were attacked with cholera. On the 3rd there was another case, and also one amongst the camp-followers. A short march was made that evening at right angles to the prevailing wind and to the east of the Ferozepore Road. The camp was pitched on land which had recently been under cultivation. One case occurred that night, and another the following morning, but both men had been suffering previously from diarrhoea. Heavy rain fell on the night of the 8th July, and swamped the encampment. It was found impossible to move the detachment owing to the saturated state of the tents and the nature of the ground which was impassable for carts or camels. On the 9th and 10th July there was again rain; two cases of cholera occurred and diarrhoea became very prevalent. The weather then cleared, and on the evening of the 11th July, the detachment took up a position at Attarie, about one and a half mile to the east. Here cholera also followed them. On the 12th and 13th, there were two cases in the detachment and one amongst the camp-followers. Ground was again changed still further east, but on the following day, the 14th, three soldiers were attacked, as were also several followers, with cholera and diarrhoea. On the 15th and 16th, two more cases occurred. It was then deemed advisable "to give the party an entire change of country," as the whole locality was considered to be unhealthy, and there were no good encampments available. The next move on the 16th was towards the north-east, when the party again encamped at Ammursiddoo. There they had another case, and on the 17th they marched in the same direction to Bhukowal, the distance each day being four to five miles. There were several cases of sunstroke during the two days' march, but the general health of the detachment greatly improved. On the 20th July they moved to Neaz Beg temporary barrack, "which could not be used before this time in consequence of cholera in the villages surrounding it." The health of the detachment continuing good and cholera having disappeared, they returned to cantonments on the 27th and 28th July.

133. The Shahdrah Detachment were likewise unfortunate. The morning of the 2nd July was very hot, and there were two cases of sunstroke after the march to Shahdrah. The troops, with the exception of 48 men, were sheltered in the cor-

ridors and passages of Jehangir's tomb. There was a case of cholera on the 4th, and four cases on the 5th July. More tents were at once pitched, and the men segregated as much as possible. On the 8th, 10th and 13th, one case occurred each day, but from the latter date to the 22nd, there were no admissions. On that day, there were four cases, and on the following day, the 23rd, three. On the 24th, the detachment marched to camp at Dilkosh Bagh, which had previously been prepared for their reception. There five fresh cases of cholera occurred, and there were also several cases of sunstroke and fever. On the 26th, they changed ground again to the encamping ground at Lahore, five miles distant, and on the evening of the 27th, cholera still continuing, it was decided to divide the detachment. The larger party proceeded by rail to Hullokee Barracks, and the smaller party likewise by rail to Ammursiddoo Barracks. The Hullokee party suffered much from sunstroke, and on the 30th July, two cases of cholera occurred. They remained a month at their temporary quarters, and having finally shaken off the disease, they returned to Mean Meer on the 30th August. The Ammursiddoo party had no cases after the 22nd July, and were brought back to cantonments on the 13th August.

134. The remaining detachment of the 106th, consisting of married men, women and children, were, as already stated, sent into camp at the Shalimar Gardens on the evening of the 2nd July. One man, two women, and one child were seized with cholera on the 2nd, 3rd and 4th respectively. A march was at once made to Tulseopore, four miles to the east of the Shalimar Gardens. Here they had three cases, and fever and ophthalmia became very prevalent. The whole party were sent by rail to Umritsur on the 25th July, and were there located in the Infantry barracks; ophthalmia increased both amongst young and old, and there were also two slight cases of cholera shortly after their arrival. The detachment returned to cantonments in small parties about the end of August, having entirely shaken off both diseases. The last case of cholera in the 106th Regiment took place in hospital at Mean Meer on the 5th August. The man was a patient at the time of his seizure and made a good recovery.

135. The Artillery at Mean Meer had hitherto preserved complete immunity from cholera, but on the 4th August, a patient in hospital was attacked. He was at once removed to the station cholera hospital. Three days subsequently two more cases occurred in hospital, which were likewise at once removed. These three men belonged to the B-A Battery, and occupied the same wing of the hospital. The remaining patients were turned out and transferred to one of the Artillery barracks in the centre of the lines. On the 11th August two cases occurred in the F. 19th in a barrack on the extreme right of the lines in close proximity to the hospital. Both men slept in the same wing on opposite sides, and one had been employed in rubbing the other previous to his removal to hospital. The barrack was at once vacated, and the remaining inmates transferred to an iron-frame barrack on the extreme left of the Artillery lines. Here two cases of cholera occurred, one on the 12th, the other on the 13th August. The whole Battery, therefore, moved to Ammursiddoo on the morning of the 14th August.

There they remained till the 2nd September, when they returned to cantonments, no fresh cases having occurred in the interval. The Artillery Bazaar, though at no great distance from the hospital in which the first seizures took place, was exempt from cholera throughout the year.

136. The troops garrisoning the fort of Lahore were singularly free from cholera during its prevalence in the adjacent city and cantonment. There were in all three cases at long intervals. The first case, in the person of a child belonging to the Artillery, proved fatal on the 8th July. The other cases, a gunner of 6-22 Battery and a private of the Detachment 38th Foot, occurred on the 1st and 30th August respectively ; they both ended fatally. The health of the garrison otherwise continued good throughout.

137. Although the large central prison at Lahore with nearly 2,000 inmates altogether escaped the disease, the women in the female jail, little over 150 in number, suffered considerably. Of twelve cases, nine were fatal. Regarding this outbreak the Superintendent Dr. Gray writes—"My impression is that it was introduced through the medium of some of the establishment, probably one of the female warders. There is a bazaar within a few hundred yards of the penitentiary in which a number of cases occurred. On enquiry I found that one of the female warders was in the way of going there for the purpose of purchasing her food. Neither she, however, nor any of the establishment suffered from cholera for many days after its first appearance among the female prisoners. This supposition, however, may be entirely erroneous. The disease might have been introduced by means of the wool, cotton or other raw material used in the manufactory, or the provisions brought for the prisoners may have been the vehicle. The first case appeared on the 10th July. From the 11th to the 20th five others were attacked. On the 21st the prisoners were moved into camp, and during their absence every ward and cell was thoroughly cleansed and disinfected."

138. On the 25th April at the Montgomery station a pilgrim was found dead and another suffering from cholera, in one of the carriages of the Railway train passing down from Lahore to Mooltan. Several facts are cited "as proofs that the disease was due to importation by the pilgrims." The circumstances which attended the epidemic in the village of Khooj Kullam are particularly worthy of notice. "A pilgrim, who died there, had, with four companions, been to Hurdwar ; they reached Khooj Kullam at 10 A. M. of the 28th April. Deceased, who had been quite well up to that time, took ill at mid-day, was attacked with vomiting, purging and cramps at 8 P. M. ; his friends put him on a charpoy (bedstead), and had him carried to his house at Deopalpore, 19 miles off, where he died at 10 A. M. the following day, three hours after reaching his house. Cholera broke out in Khooj Kullam on the 30th April, the third day of the deceased's arrival and attack of that disease." It appears that he was taken ill at the village well, and the spread of the cholera is attributed to the fact that his clothes were washed in an adjacent pond, and other parties who afterwards visited the well and the pond for water caught the infection. In this village

fifty-three persons were attacked, of whom twenty-seven died. These facts are testified to by the Deputy Commissioner Mr. Blyth and Dr. Kingsmill.

139. Mooltan had for many years previous preserved a remarkable immunity from cholera. The last epidemic of the disease which had broken out occurred twenty-three years back. It was reported to have been very severe and to have carried off vast numbers of people. In 1867 the disease was very limited in its spread, there having been in all only twenty-five cases, and these all in the city. But although fortunately so limited in extent, some very interesting particulars have been furnished with regard to it by the Civil Surgeon Dr. DeRenzy. "The first case," he writes, "occurred in a pilgrim in a railway carriage on the 26th April. The first four cases occurred among pilgrims while *en-route* from Lahore. The fifth case occurred in a pilgrim in the city on the 6th May. The victim was the wife of a rich Bunya (Wullee Ram) and there was a great *Julsa* at his house on the occasion. I am informed that 100 men and 150 women were present. On the evening of the 10th May a case of cholera occurred in a boy who lived close by the deceased's house; and there was a rapid succession of cases all through the night till twelve had occurred. A very large proportion of those attacked had attended the *Julsa*, and of the remainder all were near neighbours. There was no cholera before the arrival of the pilgrims. The circumstances stated admit of no other conclusion than that pilgrims brought the cholera."

140. In reply to the annual sanitary questions Dr. DeRenzy furnishes the following additional particulars:—"Up to this time (the 3rd May) the cases were confined to pilgrims. On the 5th May the wife of a dhobee, a resident in the city, and who had not been out of it, was attacked and died. I failed to trace any connexion between her illness and the pilgrims. Failure to discover connexion does not exclude connexion. No other cases occurred till the evening of the 10th May, when about 4 o'clock P. M. cases began to occur in the Ghogera Mohulla within a few yards of Wullee Ram's house. By 9 o'clock next morning twelve cases had occurred in the city, of which eleven proved fatal. Of the twelve cases, nine occurred in the Ghogera Mohulla all within a narrow compass, and at least four of the nine had been at Wullee Ram's house after his wife's death. One of the twelve cases of that day occurred in a female pilgrim in a different part of the city. The remaining two were residents of Mooltan, between whom and the pilgrims I failed to discover any connexion. The Ghogera Mohulla, like other parts of the city, is very closely built upon. The houses are packed together as close as they can be. The streets were narrow and tortuous and very filthy. They were unpaved and undrained, and happened at the time to be very sloppy from a fall of six-tenths of an inch of rain that had fallen on the 8th May. The soil of the streets was saturated with organic matter from the excremental accumulations of ages, and presented a black color and emitted a foul smell when stirred up. For some years back the solid excreta have been removed from the city by hand, but the liquid excreta still accumulate in the soil. The houses were badly ventilated and generally

overcrowded, and the mohulla was closed at one extremity forming a *cul de sac*, an arrangement which rendered free perfilation of the city impossible. The people were so accustomed to use foul water, that they have learned to test whether it is dangerously impure or not by dipping a rupee into the wells. If the sulphuretted hydrogen in the water tarnishes the silver much, the well is pronounced dangerous and the water abstained from. Such was the sanitary condition of the Ghogera Mohulla, and it was an average specimen of the city generally, when cholera appeared in an epidemic form on the evening of the 10th May, and such or worse it had remained for the twenty-four preceding years, during which cholera was unheard of. It was impossible to trace the course of the disease after the 11th, as the people concealed it through fear of their sick relatives and friends being removed from the city to the cholera hospital."

141. Dr. DeRenzy's report is replete with interesting details. One other **Importation of cholera into Kuhroor.** extract must suffice. "The history of the importation of cholera into Kuhroor is very clear. This city is a particularly filthy place and labours under great disadvantages as regards ventilation and perfilation, arising from its faulty position at the base of a high mound. It is fifty miles from Mooltan, and the road to it lies through a very thinly populated district. The villages along the road are ten or twelve miles apart and consist of a few huts only. Dunyapore, a town of three or four thousand inhabitants, is nearly equi-distant from the two cities. There is a small amount of traffic between Mooltan and Dunyapore, but very little between the latter and Kuhroor. Cholera had not been known in Kuhroor for twenty-four years. The first case occurred in a Mr. G., a Canal Engineer, who had left Mooltan on the 3rd July, and was attacked at Dunyapore on the 4th. There was no cholera there at that time, nor was there any subsequently. Mr. G. was carried into Kuhroor in a dying state, and expired in a few hours after his arrival. The next case was a boy named Teloka. He was seized with cholera on the road from Mooltan at Mustee Khan. He was conveyed on his arrival at Kuhroor on the 9th July—to the dispensary. He was waited on there by his father Lokoo, recovered, and was discharged on the 16th July. His father was the third case. He was attacked on the 15th July and died on the 17th. The fourth case was a man named Shukoora, a massalchee who had formerly been in the service of Mr. G., the first case. He was attacked with cholera on the 15th, and died the same day. I failed to discover positive proof that Shukoora had been near Mr. G. in his last illness, but as Mr. G. was the only European in the station at the time, and his sudden death caused considerable sensation among the Natives, it is very improbable that Shukoora, who lived in the next compound not a hundred yards off, should not have visited the house of his old master."

142. In the district of Mozufferghur, which is situated on the western side of Mooltan, cholera did not appear till late in the year. The first case occurred on the 13th of July. **Its late appearance in the Mozufferghur district.** There is no record of the number of persons attacked, but the deaths from the disease were 1,147. The civil medical officer believes, that it was "originally imported by pilgrims returning from

the Hurdwar Fair to the districts of Mooltan and Jhung, and reached Mozufferghur after the lapse of nearly a month by the extension of the epidemic from those districts." The particular grounds on which this opinion has been formed are not stated, but Mr. Harrison has no doubt that the disease was propagated by contagion.

143. In Jhung also the epidemic was comparatively late in appearing. The district, it is said, had been free from cholera for five-and-twenty years. The returning pilgrims appeared in the beginning of May. Mr. Mitnish, the Medical Officer, states—"On the 1st June four or five cases of cholera were reported at Rehannah. It was discovered that pilgrims from Hurdwar had stayed at this place and drank of the water. A few days after cholera broke out at Chowwullee, another village about 15 miles from Rehannah (the inhabitants had fled to this place)." The disease lasted in this place about a month. "On the 16th June six or seven cases of cholera were reported at Jok Mynhum about 15 miles from Rehannah. The dresser was despatched with instructions and medicines to this place. He was there about 10 days when he was himself seized with cholera." "I believe," adds Mr. Mitnish, "that cholera happened in this district probably from certain Hurdwar pilgrims passing through the village of Rehannah and drinking from the well there."

144. The district of Goojeranwallah also, which lies to the north-east of Jhung, suffered very slightly. The first case occurred at a place called Kunguewallah and was followed shortly after by five fatal cases near Wuzcerabad. These were all pilgrims. Goojeranwallah itself entirely escaped, and Wuzcerabad had only one case, and that in a pilgrim. Mr. R. C. Bose, the Sub-Assistant Surgeon, states that "the disease became spread in different parts of the district in various directions along the lines of commerce. The causes of the epidemic may be briefly mentioned to be the importation of the disease by returning pilgrims from Hurdwar, innumerable sanitary defects which then existed and still exist in this district, and a meteorological condition of the atmosphere favorable for the development and spread of the disease."

145. In the district of Goojerat, which lies further to the north, the disease appears to have been "entirely confined to the Hurdwar pilgrims." "Only one case of genuine cholera," says the Deputy Commissioner, "occurred on the 28th April, the subject being a youth of 15 or 16 years of age, a resident of the district, who had gone to Hurdwar;" he recovered as well as a few others who showed signs of choleraic diarrhoea and were put under treatment. Writing on the 30th May 1868, the district officer observes—"The cholera did not spread among the residents of the Goojerat district. It was entirely confined to the pilgrims, and no cases occurred subsequent to their passing."

146. In the Shahpore district 621 persons are reported to have died of cholera in 1867. The disease commenced in the month of June and continued till October. It appeared first at a small village (Dhull), situated on the high road from Jhelum

to Dera Ismail Khan, and from thence it spread chiefly following the bend of the river. The disease is "supposed to have followed the pilgrims," but no evidence on this point appears to be available. One instance of apparent communication of the disease is given by the Civil Surgeon, Dr. Massey. "At a town called Saheewal the inhabitants were free from the disease until three or four persons entered the place from an infected village; some of these men were attacked with cholera a short time after their arrival at Saheewal, and consentaneously the disease broke out in the town amongst the previously healthy inhabitants. The men belonged to a small village named Lukkishah, about four miles from Saheewal, and they left their houses through fear of the disease." The Deputy Commissioner gives the 30th June as the date on which the first case occurred in the district, and expresses his opinion that "it was imported from Pind Dadun Khan in the Jhelum district."

147. On the 30th April the first case of cholera occurred in the Jhelum district in the person of a boatman employed at the bridge-of-boats over which the pilgrims passed. **Very few cases in the Jhelum district.** Two returned pilgrims were also attacked, and a muleman whose mule had been hired by pilgrims coming back from Hurdwar. This district suffered comparatively little. Only 103 deaths are reported to have occurred from cholera. The Civil Surgeon Dr. Cary states that the disease "was brought in by Hurdwar pilgrims."

148. The particulars of the origin and spread of the disease in the Rawul Pindee district are very clearly and succinctly stated in the following extract of a report by the Civil Surgeon, Dr. Lyons:—"The epidemic of cholera began in the month of May, and there are fair grounds for attributing it to importation. The Hurdwar pilgrims began to enter the district about the close of April. The first intelligence of the occurrence of cholera in the district was received in the second week of May, when the disease broke out in an epidemic form at the large village of Sokow, near Goojur Khan, and within sight of the Grand Trunk Road. The native doctor, who was sent there from the sudder station to render medical aid, states positively that the first two fatal cases were *Gungabashees*, and that it was the belief of the villagers that the disease was imported by the pilgrims. The next outbreak occurred on the 20th May amongst the large body of coolies employed in the construction of the bridge on the Sohan, about five miles from Rawul Pindee. Here also the origin of the disease was apparently due to a recently returned pilgrim, a *bunniah*, who kept a shop on the further bank of the river. The first cases occurred in the immediate neighbourhood of his shop, and by far the greater proportion of the seizures and the worst cases occurred on that bank of the river. Here, likewise, the people attributed the outbreak to the only returned pilgrim on the spot. Another view of the means by which the disease was introduced amongst the Sohan coolies was suggested by the police officers. A spot about a mile beyond the bridge had been selected for the purpose of stopping the pilgrims until they were inspected by the Civil Surgeon, their bodies and clothes washed, and their baggage exposed to the sun and air, before they were allowed to enter the large city of Rawul Pindee.

It was surmised that the waters of the Sohan river had become tainted with cholera poison from the pilgrims bathing in it, and that the coolies at the Sohan bridge had contracted the disease from using the river water. This view of the cause of the outbreak, though plausible, is weakened by the fact that the inhabitants of two or three small villages, about half or quarter of a mile lower down, who likewise use the river water, were not attacked. But whether this view be incorrect or not, it does not affect the main and important fact that the primary cause of the disease was importation of the poison by the Hurdwar pilgrims. The disease subsequently spread gradually through most parts of the district. On the 25th May it occurred in the sudder bazaar of the cantonments; on the 26th in the city of Rawul Pindce; on the 7th June in the cantonments; on the 9th June in Hussun Abdal (where it was very severe); on the 11th June at Futtch Jung; on the 7th June at Huzrah; on the 28th June in the neighbourhood of Attock. A few cases occurred in the Kahoota Tehseel, where it was introduced by the Sohan coolies who had dispersed in that direction. It has since spread all over the district, but it has not been very severe in more than a few places. It was remarked that in most of the villages seized, the disease at the onset attacked a large number simultaneously, on the average about twenty to forty, of whom about half or two-thirds died. The epidemic then almost immediately subsided, or was prolonged only by the occurrence of a few desultory cases, of whom a greater proportion survived. It would then depart to some neighbouring village not always the nearest or most immediate."

149. The sanitarium of Murree, which is situated in the hills not far
 Importation into Murree from Rawul Pindce, suffered to a considerable
 not traced. extent, and the presence of the disease which was spread over many weeks caused much anxiety among the residents, who, as usual in hill stations, consisted chiefly of officers and their families who had gone up for the season to escape the heat of the plains. The history of this epidemic is very imperfect. It appears that the first case occurred on the 10th June. "This person had not come from Hurdwar. He had been living at Murree for some time previous to the attack. He was a Cabullee, strong, stout, and very robust. He had been living in a *serai* in the bazar for several weeks and been employed in making roads. The duration of the disease was very short, as he died within eight hours after the commencement of the attack. A number of Cabullees were living in the same *serai*, and many of them were quickly brought to the dispensary. At this time, up to the 20th June, cholera was confined to the people living in this *serai*, but the disease quickly spread among the natives. Many natives (servants belonging to the visitors) were attacked in the various compounds, and there was a great reluctance on the part of these people to be taken to the cholera hospital, so that very many of the cases were treated in their own houses." It is not known with any accuracy how many of the native residents of the settlement were attacked. Forty-six were treated in the cholera hospital, of whom twenty-four died. Twelve Europeans were seized and of them nine died. The type of cholera is reported to have been "most malignant and the average duration of the disease very short." Dr. Williams, who was in Civil Medical charge, states "I can see no reason for supposing the disease to have been imported"

150. In the Hazara district cholera was epidemic in the months of May, June, July, and August; during that time

Cholera in Hazara.

1,000 deaths were reported from the disease. The Civil Surgeon, Dr. Farrell, is of opinion that "it was first introduced by atmospheric influence, but its subsequent propagation was more or less effected by contagion. The first stricken by the disease were two policemen on duty at the Hurreepore Thanna, who were both taken ill with choleraic symptoms within a few hours of each other on the 17th May and both died. I believe these men had been on duty at the thannah for some days previous to their attack, and beyond the fact that the thannah might be a halting place for pilgrims and others returning to their homes, I am not aware of any contagious influences to which these men could have been exposed. I do not know the number of pilgrims who may have visited Hurdwar from this district, or the chief routes by which they returned. I believe, however, that the great majority had returned before the above-mentioned deaths occurred. At this period the rest of the district was free from cholera as far as could be ascertained." In the station of Abbottabad there were twenty-seven cases and five deaths among the Native soldiers.

151. The information regarding the appearance and spread of the disease

The disease in the Peshawur Valley.

in the Peshawur Valley is somewhat meagre, and this is all the more to be regretted, because the outbreak, which occurred among the European troops in cantonments, was very severe. Dr. Bellew, who is now Civil Surgeon, states that the first case appeared in the city of Peshawur on the 11th of May, and that between this time and the 20th June, 1,020 of its inhabitants were carried off by the disease. He says it was "supposed to have been imported by the Hurdwar pilgrims." The opinion of the Civil Surgeon, quoted by Drs. Dallas and Smith, is to this effect—"I have little doubt but that the disease was due to importation; no cases had occurred for some years, and not until after these Hurdwar pilgrims had arrived; and although the time of incubation was limited, I think there can be little doubt on the matter. I hear that the mortality among these pilgrims on their way up was severe."

152. The cantonment of Peshawur had been free from cholera for nearly

Cholera at Peshawur.

five years when the epidemic now under consideration broke out. In the month of May 1867, the European garrison of the station consisted of two Batteries Royal Horse Artillery, two Batteries Foot Artillery, the 42nd Royal Highlanders, and the 77th Regiment.

153. On the 20th of May, the first case occurred in cantonments in a

First outbreak in the Artillery.

Gunner of the E Battery F. Brigade Royal Horse Artillery. He was seized at 4 A. M., and almost simultaneously a child belonging to the Artillery was also seized; a very few hours elapsed, and two more cases occurred in the F. Battery F. Brigade Royal Horse Artillery. These four cases were in separate barracks on the right flank of the Artillery lines, distant about one mile from the city of Peshawur. The two Batteries affected were moved into camp at "Bawa" the following morning, 21st May, and every effort was made to prevent intercommunication between camps

and villages. The two Batteries in cantonments were unaffected till the 24th May, when one case occurred in the 4th Battery 22nd Brigade. On the 25th May, the E. Battery 19th Brigade had a case likewise, and that same evening the remaining Artillery force went into camp at Buddu Bar.

154. The two Batteries of Horse Artillery were encamped side by side at Barra. The E. F. Battery, in which the first case occurred, had no admissions for two days after moving out, but on the 23rd, 25th, and 26th May there were four cases, two of which occurred on the latter date. A long interval then ensued of perfect immunity from cholera. Ground was changed as a precautionary measure on the 29th May, and again on the 7th and 12th June, on which latter date the camp was pitched at "Aza Khail." Here the batteries remained for three days, during which an outbreak of the same character occurred which necessitated a further change of encampment. Almost each succeeding day there were one or more cases, but on the 14th June ten cases were admitted, and the Batteries thereupon returned to the old camp near Fort Mackeson. Cholera still continuing, they changed ground three times, and returned to cantonments on the 26th June, having been five days without a fresh seizure. On the 28th, however, one case occurred, and again on the 30th two cases, which terminated the epidemic in the E—F. Battery. The number of cases in this Battery, between the 20th May and 30th June, was twenty-six, and the deaths fourteen. The F—F. Battery Royal Horse Artillery accompanied the other throughout, but suffered much less severely. From the 20th to the 29th May inclusive there was one case almost daily. There was then a long intermission lasting till the 15th June, when cholera reappeared, cases occurring at intervals of a day or two up to the 22nd of the month. Both Batteries returned, as has been stated, on the 26th June. On the 28th a case, the last recorded, occurred in the troop quarters in cantonments. Altogether in the F—F. Battery Royal Horse Artillery, there were sixteen cases and eleven deaths.

155. The first camp of the Foot Artillery was formed at Buddu Bar on the 25th May. Here there were three cases on the same day, and again two cases on the 30th May in the E—19 Battery. On the 31st May the camp was moved to fresh ground in the vicinity, but on the day following and on the 3rd June, three cases occurred in the same Battery, and on the 4th June one in the 4-22nd Battery, this last being the only case in the Battery since the 24th May. This necessitated further change of ground to Muttunnee on the 5th, when another case was admitted from E.—19 Battery, and again one on the 6th from 4-22nd Battery. After an interval of two days, there were two fresh admissions from the latter, and it was then decided to make a retrograde movement to Buddu Bar, near the Kohat road. This was carried out on the 9th June, but was attended with disastrous results, which Dr. Summers suggests were occasioned "by the vicinity of the infected Kohat road." On the 10th, 11th, and 12th June thirteen cases of cholera were admitted into hospital, all of which belonged to the E—19 Battery. The site of the camp was accordingly again changed on the 13th June, and on the 14th the two batteries were separated, the E—19 proceeding to Chumkunnie and the 4-22nd remaining at Buddu Bar. On the 14th, 15th, and 19th June there was

a case each day in the E—19 Battery, but none subsequently, and the Battery returned to cantonments on the 27th June; the Buddu Bar encampment remaining free from disease after the 14th June. There were in all six seizures and five deaths in the 4th Battery 22nd Brigade Royal Artillery, and twenty-nine seizures and sixteen deaths in the E—Battery 19th Brigade Royal Artillery.

156. About 6-30 on the morning of the 20th May the first seizure took place in the 42nd Highlanders. The man had been on barrack picquet during the night, and was asleep in No. 8 Barrack at the time of his seizure. That same evening there were seven more admissions, all of which proved fatal. The total absence of premonitory symptoms was remarked in each case. Five companies of the Regiment marched to Chumkunnie on the 21st May. Seven cases were admitted on that day, and on the 22nd twelve cases. Of these latter six were from camp and six from barracks. Three more companies were sent out to join the camp on the 23rd May, and on that date there were thirty-seven admissions. Ground was changed the following day, and the remaining two companies, with the hospital, joined from Peshawur. On this day, the 24th May, there were twenty-five new admissions. The camp stood fast on the 25th, and there sixteen fresh cases occurred. A short move was made on the 26th and eight cases were admitted, followed by six on the 27th; ground was again changed, on the 29th May, and there were four fresh cases. Improvement not being manifest, it was resolved to divide the Regiment into wings, and then march for Cherat. On the 31st May the right wing accordingly moved to Oomur Payan, seven miles off in a south-east direction, thence *via* Jalouzie and Shahkote to Cherat, followed by the left wing a few marches in rear. A few more cases occurred during the progress of the Regiment towards Cherat, but they were of less frequency, and by the time the entire Regiment was located at the sanitarium, all traces of the epidemic had ceased. This was about the 18th of June. During this trying period of epidemic prevalence of cholera, extending over not more than twenty days, the admissions amongst the men, women, and children of the 42nd Highlanders amounted to one hundred and thirty-four, and of these seventy-four died.

157. The first case recorded in the 77th Regiment was that of a patient in hospital, who was attacked by cholera on the 21st May at 11 A. M. On the evening of the same day, a second case was admitted from the barrack workshops. The next case occurred in a Private of the same Regiment on duty in the fort, which is close to the city. He was admitted at 3 P. M. on the 22nd May. The following day there were three cases from different parts of the barracks, and it was then arranged that the four companies to which the patients belonged should go into camp at "Harree-Sing-ka Boorj," which is about four miles distant along the Michnee road. This they did the same evening. On the 24th and 25th there were two cases each day, and on the 26th May twelve men were admitted into hospital with choleraic diarrhoea, four of which eventually passed into true cholera; ground was changed on the 27th in a southerly direction towards the Barra river. There were no fresh admissions that day, but on the four following days occasional cases of cholera and choleraic diarrhoea occurred, which necessitated a further removal of the camp. This was carried out on the 2nd June, the companies

encamping closer to the Barra river on an elevated ridge of ground. Here they remained till the 11th June, having during the interval experienced a fresh outburst of cholera. On that date the camp was moved four miles to the left to the banks of the Barra river. "The Detachment," Dr. Hensman states, "now continued free from disease for eight days, when a solitary case was admitted." This was the last amongst the companies first infected.

158. Cholera was not long in asserting itself in the head quarters detachment and sick left behind in cantonments. Attacks the portion left in cantonments. A man of F. Company was seized on the 24th May, and on the 26th the hospital inmates were attacked. Nearly the whole of the ordinary sick were then transferred to No. 4 Barrack Bungalow, which had been unoccupied during repairs, only a few sick females and cholera patients being left in the regular hospital. Another case occurred there on the 30th May, and on the 31st May a man of K. Company, living in a different barrack-room, was admitted with cholera; an intermission followed this last case, but again, on the 3rd June, two patients in the remaining hospital ward, the wife of one of those men from the married quarters and a man from the barracks, were all attacked.

159. All the ordinary sick, male and female, were at once sent into camp a mile and a half from cantonments, where, on the 12th Occurrences in camp. June, those who had been transferred to the barrack hospital also joined them. A case occurred in the camp hospital on the morning of the 4th June, and again on the 5th June. The camp was accordingly shifted on the 6th June to a spot two miles out on the Michnee road, where two days afterwards two companies from head quarters joined it. The tents of this detachment were pitched some distance in rear of the camp hospital on the opposite side of a stream. That evening a fatal case occurred in the detachment, and on the 9th a patient in hospital was carried off. The following day a march of four miles was made towards a new encampment, four miles from Peshawur on the Barra road, close to the river, and here the remaining sick from the barrack hospital in cantonments joined the party on the 12th June. Between the 11th and 16th June, during which time the camp was stationary, there were fourteen fresh admissions. On the latter date a further move was made across the Barra river to ground covered with loose stones and very scanty vegetation. From the 17th to 21st June there was no recurrence of cholera, but on the 22nd one case from the detachment was admitted, and there were also several cases amongst Native followers. That evening a violent thunderstorm occurred and cholera thereafter disappeared. The camp returned to cantonments on the 28th June. The head quarters of the Regiment, with the remaining companies, went into camp on the Kohat road on the 10th of June. No sick were carried with them, but on the 12th one of the bandsmen was attacked with cholera. There were no more cases till the 17th June, but on that day there were four admissions, the Adjutant who died being one. On the 19th another case occurred, and on the morning of the 20th ground was changed to a distance on the Barra road three miles from Peshawur. There two more cases occurred on the 23rd and 24th, but these were the last in the Regiment. The total admissions from cholera in the 77th Regiment amounted to 78, and the deaths to 54.

160. The Native portion of the garrison suffered comparatively little. The Native troops suffered comparatively little. Out of a strength of 4,395 only 68 in all were attacked, and of these 27 died.

161. Considerable obscurity hangs over the origin of this virulent outbreak. The late Dr. Macintire, Deputy Inspector General of Hospitals of Her Majesty's Indian Service, ascribed the appearance of the disease entirely to local causes, and stated his belief that when the epidemic commenced among the European troops there had not been a single other case of cholera within one hundred and twenty miles of Peshawur. There had, however, been a case in the city on the 11th of May, and the pilgrims returning to Jellalabad had passed through the neighbourhood on the 19th, or the day immediately preceding that on which the troops were seized. It is also a noteworthy fact that the 42nd Highlanders, among whom the disease became so rife, had been volunteering into other Regiments not long previously, and the volunteers after receiving their bounty were constantly in the habit of passing their time in the city of Peshawur at this very period." The percentage of those men who were attacked was much greater than that of those who had not volunteered, as is shown in the annexed statement; but whether the difference in this respect is to be ascribed to the fact that the volunteers were more in the city, or that they had been rendered more liable to attack by intemperate habits or to both causes having been at work, cannot be ascertained.

Regiment.	Description.	Strength.	No. attacked.	No. died.	RATIO PER CENT. OF STRENGTH.	
					Attacked.	Died.
42nd Highlanders.	Non-Volunteers ...	523	84	46	16.08	8.80
	Volunteers ...	151	35	21	23.17	12.19
	TOTAL ...	674	119	67	17.65	10.0

Although, therefore, there is no direct evidence to show that the cholera was introduced by the pilgrims, the history of its upward advance the events which occurred in the other districts through which they passed, and the fact that they had arrived in Peshawur before the disease appeared, all tend to render it extremely probable that it was imported into the city and afterwards into the Military station.

162. It has been stated that there was a case of cholera in the city of Peshawur on the 11th May, but it is right to add that the truth of this statement has been called in question. At the request of the Government of the Punjab a Military Committee assembled at Peshawur to enquire into the origin of the outbreak, and in their report, which is dated the 18th September, they reply to the various questions which had been proposed. They state that the "cholera broke out in the city of Peshawur on the 23rd May, one Sirdar Sing, Hindoo, was the first attacked, and succumbed to the disease." This was followed by the seizure of three other persons. None of these people, it is stated, had

been among Hurdwar pilgrims. "Previous to the outbreak in the cantonment no case was reported as having occurred between Attock and Peshawur in the daily reports of the police, who had strict orders from the Deputy Commissioner to be on the watch." The first man attacked in cantonments at 4 A. M. of the 20th May had not visited the city or bazar, so as to come in contact with pilgrims. Within a few hours two other artillerymen and a child were attacked; "all these cases were in separate buildings on the right flank of the Royal Artillery lines, and extended gradually to the left." It appears that "about the 25th or 26th April, the first pilgrims began to return; these were of the better classes, travelling by dāk; during May the general influx to the city commenced, arrivals occurring daily. From the city of Peshawur 548 men, women, and children went to Hurdwar; of these 524 returned, 24 having died of cholera or other diseases on the road, but the nature of these diseases, and the locality of the last case, cannot be ascertained. Of the 524 who returned only seven afterwards died of cholera, but there are no memorandums to show the dates of each death. From the cantonment 22 persons only in all went to Hurdwar. These all returned, having had no sickness amongst them on the road and not having come in immediate contact with it. Neither have they or any of their families since been attacked, nor did the disease show itself among those living close round about them." From all the facts and the absence of any trace of the disease above Lahore, "the Committee consider that the outbreak of cholera in Peshawur cannot be ascribed to the return of the Hurdwar pilgrims."

163. In opposition to the facts recorded by the Military Committee the

Statement of the Sub-Assistant Surgeon.

Sub-Assistant Surgeon, Cheytun Shah, whose exertions during the epidemic are honorably mentioned by the Commissioner, reports—"On a close enquiry

the earliest noticed case appears to have been of one Shunkur Doss in the Undur Shahar Mahalla on the 11th May, *i. e.*, about a fortnight after the arrival of the first Hurdwar pilgrims, and four days after the arrival of his father-in-law, also a Hurdwar pilgrim, with whom he lived in the same house. The symptoms of the case, as stated by the hakeem who attended him, appear to have been those of genuine cholera. This case recovered. There were admitted into the dispensary on the 13th and 14th of May three cases of dyspepsia, and one of them showed symptoms of collapse. This man also recovered, and the case passed as doubtful. On the 20th, however, cholera made its appearance in the cantonment, and on the 21st it spread in an epidemic form in the city."

164. The Civil Surgeon, Dr. J. J. Clarke, thus corroborates the statement of Cheytun Shah—"I have looked over all the evi-

Corroborated by the Civil Surgeon.

dence in the Magistrate's Office, and by the aid of Cheytun Shah, through the Kotwal, I have learnt

all that can be relied on about the outbreak of cholera in the city, &c.

"1st.—The case of Shunkur Doss, who was seized on the 11th of May and who recovered, lived with his father-in-law, a pilgrim from Hurdwar, who returned to Shunkur Doss's house four days previous to his attack. The pilgrim

himself in no way suffered either on the road or at home. So far as I can learn from the hakeem himself who treated the case, I should say it was, if not a case of pure cholera, one at all events with choleraic symptoms, as cramps, vomiting and purging, &c. The hakeem himself, I may mention, was a pilgrim, and returned from Hurdwar with Shukkur Doss's father-in-law.

"2nd.—Utter Sing, a man of about 20, was seized and died on the 14th May in the city, and his body was burnt on the 15th. His death is recorded in the Brahmanical records. Utter Sing's father is a druggist, and states that his son's death was caused by cholera; that he had *bad* cramps, vomiting, purging, &c., and that previous to the attack he was quite well.

"3rd.—Sirdar Sing, the man recorded by the Military Committee as the first victim, was *seized* and *died* on the 23rd May. This man, Sirdar Sing, was a Hindoo fukeer, and lived *outside* the city at the Tucksallee City Gate, through which gate the pilgrims mostly entered the city, it being the gateway where the *choongee* is gathered, and possibly the greater number of them held converse with him as they passed by."

165. In the Kohat district "one man was seized," writes the Deputy Commissioner, "on the 22nd May with cholera at the Shadipore Ferry, and died the same evening. No other cases have occurred, and most of the pilgrims who went from this district have returned." No report of later date has been received regarding the civil population. Mr. Tandy, the Medical Officer of the 3rd Sikh Infantry, appears not to have been aware of the case on the 22nd May. In narrating the history of the epidemic, in which his Regiment and the other Native troops at Kohat suffered, he states—"Its first appearance among the civil population was on the 26th July in the village situated close to the station hospital on its eastern side, whence it spread among the villages in the Kohat valley, and thence travelled north-west to the Hingoo valley. It persisted at its greatest intensity from the 13th August to the 12th September and then suddenly ceased. It reached its maximum and disappeared in cantonments and the district simultaneously." Among the troops the disease first appeared in a detachment of the 3rd Sikh Infantry, which had been on out-post duty, and marched into Kohat on the 9th July; on the 10th two cases were brought into the station hospital; on the 12th two cases occurred among the residents. "No case," writes Mr. Tandy, "had occurred in the district prior to the outbreak in the detachment 3rd Sikhs on the 9th July. No direct communication could be traced between the detachment 3rd Sikhs and the two which occurred in cantonments on the 12th July, and the two which appeared on the 21st." Up to the 12th September there were in all 12 cases and 69 deaths, including camp followers.

166. As regards the origin of the disease in the Bunnoo district the Civil Surgeon remarks, "no certain intelligence can be obtained, but the disease is believed to have been introduced from the Rawul Pindee district, by means of the salt traders, to Maree, Kalabagh, and Meanwallee. The cholera appeared in the latter place as early as the 26th May, and gradually spread and continued till July. On 31st

Cholera attacks Bunnoo in July.

July three sepoys in quarantine camp at Nowrung, sixteen miles from Bunnoo, were seized with the disease. They were Dograhs returning from their homes in the Kangra district, where cholera was prevalent when they started to rejoin. On the 19th September a Kahar, who had visited Nowrung, was attacked with cholera, and on the 20th September the first case amongst residents of the city occurred, and the last case on 11th of October. The date of first case in surrounding villages is not exactly known; but when the city people fled in the beginning of October the villages suffered. About the 20th September the epidemic appeared to subside in the near villages, but there have been slight outbreaks since in remote places; and lately, about 19th November, it showed at Tajom, a village 39 miles from Bunnoo, and continued till 22nd of same month. The duration of the disease has been five months and four days."

167. In the district of Dera Ismail Khan the first case of the disease is reported to have occurred on the 5th August and the last on the 24th of September. Between these dates it is stated that 246 persons were attacked, of whom 83 died. It was confined to Kotsultan and the surrounding villages. No British Officer was in medical charge at the time, and there is no evidence to show that the disease had been introduced by pilgrims. It is reported that they had all returned long before the first case occurred. Among the Native troops occupying the cantonment there were no cases.

168. In the military station of Dera Ghazee Khan two cases occurred in July and one in September. Throughout the district 857 deaths from the disease were reported between the 1st June and the 15th of August; of these 517 occurred in July. Cholera had been unknown in the Dera Ghazee Khan district for many years, and the cause of last year's epidemic has not been ascertained. "There was no evidence," writes the Civil Surgeon, Dr. George Thomson, "to show that it was imported."

169. The city of Sirinuggur and the valley of Cashmere generally were visited by the disease. Major Cracroft, who was on special duty, reports that "it was brought by some soldiers who had been with His Highness the Maharajah to the Hurdwar fair." The first case occurred among the troops about the 8th June, and the epidemic lasted until the 15th September." It is estimated that 12,485 persons were attacked, of whom 6,295 or about one-half died. Dr. Lackersteen also expresses his opinion that "the seeds of the late epidemic were no doubt sown by the troops returning from Hurdwar." At one time as many as 200 deaths were daily occurring.

170. In Cabul the sufferings of the people were great. The following particulars regarding the disease in that country have been kindly supplied by Mr. Wynne, Under Secretary to the Government of India in the Foreign Department. The first notice of the prevalence of cholera in those parts is found in a report of the 19th July. It is there stated that Jelalodeen, an intriguing Sirdar, who

was at Bajour in the Kaffiristan Hills, intending to pounce on Jelalabad, was deterred from, doing so "by reports of cholera." The further information is thus communicated—

"26th July 1867.—For the last four days owing to the increase of cholera; there has been no durbar, the bazars are closed, and from 100 to 150 people die daily in the town of Cabul, vomiting and purging carry off those attacked in the course of three or four hours, and no medicines avail. The disease has spread to the country round, and, except on very urgent business, no one leaves his home.

"29th July.—Many of the Cabul soldiers have left for their homes on account of the cholera, without leave; about half the Army remains at Cabul.

"3rd August.—A great deal of cholera reported in the city.

"12th August.—The ruler of Cabul has ordered the traders of the bazars, who had closed their shops in consequence of the cholera, to open them again under pain of a fine of Rs. 25. There is an improvement in the health of the city since the 11th.

"14th August.—About 8,000 people have succumbed to cholera, and the disease is now abating.

"19th August.—Cabul is becoming more free from cholera since rain has fallen; the villages in the vicinity continue to suffer severely.

"22nd August.—Cholera continues.

"24th August.—Cabul continues to suffer from cholera; it fluctuates,

"8th September.—and then becoming worse and then becoming better. The vicinity is now free from cholera.

171. Throughout Agra, Etawah, Muttra and Furruckabad, which are ^{Very little cholera in the} districts of the Agra division, the disease was ^{Agra Division.} fortunately slight. There was no evidence in any case to show that it had been communicated by pilgrims. The outbreak at Agra in December 1866 has been already recorded, and most of the reporters from this part of the country state that cases had occurred now and then during the months of March and April. Among the prisoners and troops at the station of Agra, numbering altogether about 3,500 persons, only two cases of cholera occurred throughout the year, and these were among Native soldiers. In the districts of Etah and Mynpooree, the mortality from the disease is said to have been considerable.

172. At the Secundra orphanage, $5\frac{1}{2}$ miles from Agra, an outbreak of cholera ^{Outbreak at the Secundra} suddenly occurred on the 30th May, and continued ^{orphanage.} till the 6th of June. Out of a total strength of 456 Native Christians, forty-six were attacked and thirteen died. The first twenty-eight cases were solely from amongst the big girls who had been exposed to the rain. "Possibly," observes the Civil Surgeon, "had I kept the small girls separate, they might have remained as free from the disease as the boys did—not one boy was attacked." "On the evening of the 29th May," writes Dr. Playfair, "the girls had been out for their usual constitutional walk. When returning,

and within the compound of the orphanage, a sudden shower of rain fell; the younger girls being close to their dwelling, at once escaped, but the elder girls, having to go about a hundred yards further, got more or less wet. Next morning, about half past four o'clock, one of the elder girls was found lying moribund in the court attached to the sleeping verandah, with all the appearances of cholera morbus. She died in an hour and a half; and from that time the disease spread with great rapidity."

173. It is worthy of special notice that, while the Agra district almost entirely escaped the epidemic, the State of Bhurtpore, which lies immediately to the west, suffered considerably. As has been already noted, cases occurred in Bhurtpore at the close of 1866. On the 6th of April 1867, Dr. Harvey states that a fresh outbreak commenced. The disease spread throughout the whole State with rapidity, and by the beginning of May was prevalent in every pergunnah. It was fortunately of a mild type. In the city of Bhurtpore, where it was most severe, the total number of deaths is estimated at 255. The fresh appearance of cholera in April could not be traced to returning pilgrims, nor is it probable that they were the cause of it. Few or no pilgrims had returned from Hurdwar by the 6th of April, and among the 1,000 or 1,200 followers who accompanied the Maharajah to Hurdwar, no case appears to have occurred after their return to their homes.

174. No reliable information of the ravages of cholera in the State of Gwalior is available, but it would appear that the epidemic of the past year was a mild one. Cases now and again appear at all times and seasons in this part of the country, so much so, that the inhabitants of the cities and villages are said to look upon the disease as a more or less constant visitor.

175. The report of Dr. Morice, the Residency and Staff Surgeon, deals only with cholera as it occurred in the cantonment of Morar and its neighbourhood amongst the Native inhabitants. Dr. Menzies, Superintending Staff Surgeon Major British Troops, deals mainly in his report with the rise and progress of cholera amongst the Europeans. The cantonment of Morar has suffered periodically, but at long intervals, from epidemics of this disease. It appears, however, to have culminated in severity in the years 1860-61-62, in all of which it committed considerable ravages. Since the latter year the station has been almost, if not entirely free from cholera. The origin of the present outbreak seems to be undetermined. Dr. Menzies remarks on this subject that "we have direct evidence of a connecting link, although a weak one, between Gwalior and the Hurdwar fair in the fact that though His Royal Highness Scindia did not go, one of his Sirdars did go with a few followers; his return was rapid on account of the sickness. None of his people suffered." Again—"I am not disposed to drop the link of connection, however slight, between the Hurdwar fair and this year's outbreak of cholera in the Gwalior district; there is no doubt that some persons, and they may have been infected, came from there as well as from the Agra Durbar and Butaisser fair." Speaking of this latter fair Dr. Morice states—"There was not much sickness there this year, and I have never heard of any violent epidemic occurring there. There has been on an average about

one death per month, since the fair took place, amongst camp followers and coolies in the Sudder Bazar from cholera." It would, therefore, appear that no direct evidence of importation from Hurdwar can be brought forward in the case of the Gwalior State. The pilgrims were not numerous, and most of them must have returned to their homes long before the disease began to assume an epidemic form in the city of Gwalior and cantonments of Morar.

176. The Gwalior Durbar furnishes a return which shows that the first death prior to the epidemic invasion took place on the 22nd of May in the Lushkur five miles distant from cantonments. Up to the 31st of May only five deaths were reported, the city of Gwalior being still free. Towards the end of the month cholera appeared in a village called Koomarpore, to the south-west of the station of Morar on the opposite side of the Morar River. This village is reported to have been "in a filthy state with drains running close by the wells used for drinking water, and surrounded by heaps of stable litter and rubbish." The cantonment latrine pits which "were most offensive" were close to the village. Vigorous conservancy measures were adopted, and the village put into a proper sanitary state. Quarantine was established and the sick were removed to a temporary hospital a few hundred yards distant. No fresh cases occurred for some time after the cleansing of this village. The Sudder Bazar, which is close to "Koomarpoor," did not long remain free. There were several cases in it a few days after its appearance at Koomarpoor. The disease soon after appeared in the village of Pudumpoor at the extreme end of cantonments, distant about 2½ miles from the Sudder Bazar. The condition of this village is likewise reported as very unsatisfactory. "The latrines had been washed away by the rains, and the soil was exposed to the action of heat and moisture." Details of the subsequent progress of cholera in these villages and in the Lushkur and Native city of Gwalior, are very imperfect; but it would appear from the returns furnished that the disease continued to hang about in the former till the middle of September. During this period of four months, 113 cases and 59 deaths are returned amongst the native inhabitants of the two villages and cantonment bazars. After its first invasion in May it progressively increased to about the end of June. In July there were but three cases, and again in August there was an increase. There were no cases after the 15th September. The first death, as already stated, occurred in the Lushkur on the 22nd May, and the last death on the 22nd August. During these three months there were only 41 deaths in this populous locality, 35 of which were Hindoos. This fact may appear significant of importation from Hurdwar, but it must be remembered that Hindoos largely preponderate in the population of the Lushkur. In the Native city of Gwalior, the first death recorded occurred on the 7th of June, and the last on the 13th September. There were in all 60 deaths, namely, Hindoos 32, Mussulmans 21, and Christians 7. Nearly one-half of these occurred in the month of August.

177. Dr. Menzies remarks that "the first sharp chord of alarm at Morar was struck at the end of May. On the 31st the 103rd Royal Bombay Fusiliers suddenly lost one man, and in the first fortnight of June, the 11th and 12th, two boys, sons of one of the Privates, also died." Strenuous efforts

Cholera among the Europeans at Morar in May and July.

had been made to check the disease in the bazars and villages when it first appeared. These were attended apparently with success, and hopes were entertained that cholera had been eradicated, the more especially as no further cases occurred amongst the Europeans. On the 10th July, however, a patient in the hospital of the 103rd was attacked. He died the following day. On the 13th and 15th there were two cases in the barracks, one of which proved fatal in eleven hours. Preparations had meantime been made for the Regiment to go into camp. They accordingly marched that evening (the 15th July) to Girgoon, distant three and a half miles from cantonments in a north-easterly direction. Dr. Menzies states that this change was attended with the best results. Only one case of choleraic diarrhoea occurred, the general health improved much, and the Regiment returned to quarters on the 25th July, having only been absent ten days.

178. Fears were entertained that, as the epidemic season had not yet passed, cholera might re-appear in cantonments. Its reappearance in August. The strictest sanitary measures were therefore enforced in all the barracks and bazars. As anticipated, it did reappear, in the early days of August, amongst the bazars and village inhabitants. On the 12th August a fatal case occurred in the C. F. Royal Horse Artillery; a patient in the 103rd hospital was seized with choleraic diarrhoea on the 14th August; on the 17th *idem*, a Private of the same Regiment was attacked with cholera; and on the 20th another patient showed symptoms of choleraic diarrhoea. The camp was reformed at Girgoon, with a view to accommodating two companies of the 103rd should the disease spread, but it was not required. "A patient in hospital was attacked on the 23rd with slighter symptoms, and on the 24th a delicate child of the Band Master died of choleraic diarrhoea." These were the last cases of the kind in the 103rd Regiment.

179. As already remarked the Artillery remained free from the disease up to the 12th August, when the C. Battery F. Cases among the Artillery. Brigade, lost a case. On the 23rd of that month, simultaneously with the last case in the 103rd Regiment, a case occurred amongst the men of E-11 Battery Royal Artillery. The C. F. Royal Horse Artillery had two fatal cases again on the 29th August, one in barracks, the other in hospital. The sick were at once moved out to camp two hundred yards distant from the hospital, and a camp was likewise prepared for the Battery about three miles E. S. E. of the station. The next fatal case in the person of an ophthalmic patient of the same Battery, who had been left behind in one of the small hospital wards, occurred on the 4th September. On the 8th, and again on the 11th September, there was a case respectively of choleraic diarrhoea and cholera, the latter proving fatal in a few hours. Dr. Menzies in summing up says—"From the 31st May then, until the 12th September, the 103rd Regiment had five cases and three deaths, the Royal Artillery Division six cases and six deaths, and five of them were in one Battery, the C. F. Royal Horse Artillery; they were spread over such a lengthened period, and all appeared so distinct from each other, and so purely sporadic, that it was not considered necessary to move them into a camp of health, but every preparation was made for that purpose."

180. The Native troops in the Morar cantonment, though strong in point of numbers, there being two Regiments of Infantry and one Regiment of Cavalry, were wonderfully healthy during the prevalence of cholera in the villages and bazars. Two cases only occurred, one in the 22nd Native Infantry, the other in the 33rd Native Infantry. These regiments are widely separated from each other, the 22nd on the extreme right, and the 33rd on the extreme left of the station. There were no cases of cholera in the 16th Bengal Cavalry.

181. A detachment of the 103rd Regiment, consisting of 6 officers, 217 men, 39 women and 73 children, composed the garrison of Gwalior on the 19th July 1867. Up to that date, cholera had not made its appearance, although the position of the fortress between the thickly peopled Native city and the Luskhur, in both of which cholera was prevalent, rendered it most probable that exemption would not long continue. Free communication was maintained, rendering it all the more likely that disease would soon reach the garrison. Accordingly, on the 19th July, a patient in hospital, under treatment for syphilis, presented well marked symptoms, which, however, ended in recovery. Until the 14th of August, the detachment remained free from the disease, but on that date a Sergeant, who had just returned from leave to Morar, was attacked and died in a few hours.

182. Owing to the unsafe state of the barracks, the whole detachment, with the exception of the two married families, were moved into tents a few days before the occurrence of this last case. This would appear to have been a fortunate step. The married families quartered in No. 3 Barrack were next attacked. On the 16th August two children died, the one of cholera, the other of choleraic diarrhoea. On the 17th a woman was seized who died on the 22nd, and on the 19th a girl who recovered. On the 23rd there were two more cases amongst the occupants of the same Barrack No. 3, which rendered it necessary that the building should be at once vacated. This was done with the effect of checking the further inroads of disease in the occupants of the barrack. During the following five days, with the exception of the 27th August, there was a case each day. Of these five cases three occurred in hospital, one in camp, and one in the staff quarters. Again, on the 6th September, an overseer of the Public Works Department, living in the fort, was attacked and died. A soldier living in the Officers' Square showed slight symptoms on the 11th September, after which cholera entirely disappeared. The married families in whom the disease was most virulent were sent out to quarantine camp on the 28th August. Having finally shaken off all traces of cholera, they returned to cantonments on the 7th September.

183. The Native State of Jeypore, which lies to the south-west of Bhurt-pore, also suffered from cholera. The Medical Officer of the Political Agency reports that it appeared on the 15th April, and continued with more or less severity up to the 20th of October. Throughout the State 739 deaths are reported to have taken

place from the disease, of which 428 occurred in the capital. Dr. **Burn** expresses his opinion that the disease was "communicated by pilgrims from Hurdwar." In answer to an enquiry on the apparent impossibility of any one who had been at the fair having returned by the 15th April, he states that there is no mistake, and that the first case of cholera actually occurred in one of the pilgrims from Hurdwar on the day in question.

184. The cantonment of Deolee is situated at a point where the Jeypore, Boondec, Oodeypore and Ajmere territories meet, and is about 95 miles distant from the capital of the first of these States. Of the epidemic of cholera which occurred at this station, an excellent account has been furnished by Surgeon Major J. D. Crawford, of the 2nd Bengal Cavalry. The prevalence of cholera in Bhurtpore and Jeypore in May had come to his knowledge; "early in June it was known to be in a village four miles distant, and on the 20th of that month the first case occurred in Deolee itself." Dr. Crawford says—"I have not been able to connect the outbreak of the disease here with the arrival of pilgrims from Hurdwar, and I believe they must have all reached this part of the country about a month before cholera made its appearance." "In this way, however," he believes, "the disease was conveyed in this direction rapidly as far as the Jeypore territory. The stream of pilgrims then becoming very small, the disease died out from amongst them and afterwards progressed by slower and more gradual steps from village to village until it reached Deolee." Dr. Crawford traces three distinct waves of the epidemic, each of which invaded a fresh section of the inhabitants; the third wave, which invaded the station on the 20th of July, having been cut short by moving the troops into camp on the 22nd. Between the 20th June and the 31st July there were in all 41 cases and 12 deaths among the Cavalry, in the Deolee Irregular Force 46 cases and 10 deaths, in the Sudder Bazar 22 cases and 6 deaths, in the Civil Lines 33 cases and 13 deaths, or a grand total of 142 cases and 41 deaths.

185. Several instances of apparent communication of the disease are given by Dr. Crawford:—"Of the 41 admissions in his Regiment 12 were either members of the same families or lived in the same hut with some of the others:—

A saees's wife died in lines on morning of 8th July	...	} Lived in the same hut.
Her step-son admitted 10th July	...	
A saees's wife admitted and died 8th July	...	} Ditto.
Her child admitted 8th July	...	
A second girl admitted 11th July	...	} Ditto.
A saees's child admitted 8th July	...	
Another child admitted 8th July	...	

A sowar was admitted on the night of the 17th July. His wife's mother admitted 24th July. His wife's great-grand-mother was admitted on the 25th July. The wife and grand-mother escaped. These people lived in three separate huts, but there was constant intercourse between them, and the husband of the woman who was first taken ill had been in attendance on his son-in-law. Again, a sowar was admitted and died on the 11th July. Another who lived in the same hut was admitted and died on the 17th; he had attended on his comrade in hospital. A child was admitted and died on the

8th July. A woman living next door was admitted, and died on the 11th; she had assisted in attending on the child before it was taken to hospital. Two of the hospital servants also suffered from the disease, and so did the Native doctor.

186. In the hospital establishment of the Deolee Irregulars, on the other hand, not a single case occurred. The theory of contagion is not supported by any facts noted in the epidemic so far as it attacked this force. The opinion of the medical officer on the subject is thus stated:—"There can, I think," writes Dr. DeFabeck, "be no doubt that this epidemic owes its origin to the transmission of the disease from Hurdwar by the pilgrims returning from that place after the great festival held there early in the year; but while this conviction forces itself strongly upon us, I must admit that the small amount of evidence which I have been able to collect from persons who either themselves visited or have since been in communication with others who visited Hurdwar, is very inconclusive."

187. From Rajpootana the only report received is from the Civil Surgeon of Ajmere. In that part of the country the disease continued from the 9th July to the 30th September, but during all that time only 247 persons were attacked, of whom 65 died. Three of the Europeans in the fort also suffered from the disease which proved rapidly fatal in the case of two of them. Dr. Murray states:—"I could not in any instance connect the appearance of the malady with the advent of pilgrims returning from Hurdwar." In Marwar there was no epidemic.

188. The Central Provinces enjoyed a remarkable immunity from cholera during 1867. Neither in the jails nor among the troops, either European or Native, did a single case occur. The Civil Surgeons of Hushungabad, Baitool, Nursingpore, Raepore, Mundla, Nimar, Seonee, Dumoh and Nagpore all report that the year was singularly free from epidemics, and that cholera in particular was almost entirely unknown.

189. The occurrence of a smart outbreak among the prisoners in the Allahabad Central Jail in the months of March and April has already been mentioned in the early part of this report. The following particulars regarding the appearance and progress of the disease in the division up to the 22nd June are thus given by the Commissioner:—"In the district of Allahabad, the first cases reported were on the 24th April, three cases occurring at Lutchageer, a village on the left bank of the Ganges, at which river steamers during the hot months terminate their voyage. Altogether seven other cases occurred in the Hundeea and Mah Pergunnahs, but the disease was sporadic, and did not attract notice up to the 30th April, when it broke out with considerable violence in Ghoorpore, a village on the Allahabad and Rewah road, in Pergunnah Arail, about eight miles west of the Central Prison, and from this date the cholera proceeded steadily west along the south, or right bank of the Jumna. From 30th April to 7th May, 27 cases occurred

in Ghoorpore, which ended in death in 19 cases. From the 3rd to 16th May it spread over the Bara pergunnahs of Allahabad, and the adjoining pergunnahs of Chiboo and Tirohan, in the Banda district. From the 19th it decreased south of the Jumna, but crossed this river at Kote, a large village in the Ekdilla Pergunnah, and thence westward along the left or north bank of the Jumna, as far as the Ghazeepore Pergunnah, but up to the last returns has not gone further in this direction. From 28th May it again increased in the Chiboo, Tirohan, and Dursenda Pergunnahs of Banda, where it has been since raging in violent and epidemic form. Excepting in the two pergunnahs of Futtehpore mentioned above, the epidemic has been confined to the Bundelkund soils south of the Jumna. The Doab, including the military stations of Allahabad and Cawnpore, have been almost free of the disease, and I take the epidemic line to have commenced in Hundeea, on the extreme east of the Allahabad district, and to have travelled thence west and south, crossing the Ganges at Lutchageer, and thence proceeding through Arail, Bara, and Khyragurh, all south of the Jumna, in the Allahabad district, into the Banda district, and partly in a branch line into the Futtehpore district." "Not one single case," he adds, "can be traced to pilgrims returning from Hurdwar."

190. A month later, when it was reported that "as far as one can foresee, The disease among the European troops. cholera need not be apprehended in the station of Allahabad, for it has passed away to the west of it," the disease broke out among the European troops. It appeared suddenly on the 28th July. The troops were healthy, and the sanitary state of the cantonment good. The first person attacked was an officer of the 107th in the "Chatham Lines," who was suffering from dysenteric diarrhoea, and who sank rapidly. A woman of the 107th in an adjoining barrack was attacked next day, as was also a man of the same corps. The wing of the 107th occupying the "Chatham Lines" was accordingly marched into camp on the 30th, and remained free from the disease till the 8th August, when it broke out again. On the 12th the camp was shifted to Madowri; no further cases occurred, and the wing returned to the Chatham Lines on the 20th. The wing of the 107th in the Clydesdale Lines was attacked with cholera on the 1st August, from which date to the 6th, five cases were admitted, of which two proved fatal. The wing, including head quarters, was accordingly moved into camp at Mhowke Serai, four miles off, but though the site of the camp had been carefully chosen and promised well, the disease continued to prevail; seven men and a child were attacked between the 8th and the 12th, and on the latter day the camp was shifted to another spot. Five fresh cases occurred here on the 13th; the disease then ceased until the 26th, when, as the detachment was about to return to barracks, two fresh cases (a married man whose child had already died of cholera, and a bandsman who had been encamped close to the married people) occurred. The detachment, with the exception of the married people, was moved that day into barracks. One case was admitted on the day of the return to barracks, and this was the last that occurred. The married people were moved to a fresh camp six miles off; they remained healthy, and returned to cantonments on the 29th August. One case occurred on the 7th August in

the detachment of the 107th in the Fort. It did well. The Artillery remained free from cholera up to the 6th August. Between the 6th and 9th, three men and two children were attacked. The entire Artillery division was then moved into camp four miles out of the station, whence they returned to cantonments on the 30th August, having been quite healthy in the interval. Nearly one-half of those attacked with cholera in both corps had been men of intemperate habits. The weather during the outbreak was seasonable. The heat was never excessive; there were fresh easterly breezes, and the rainfall was moderate. The health of both corps had been excellent up to the time of the outbreak, and the arrangements for marching out to camp, and from one camp to another, were very efficient, and such as to save all unnecessary fatigue to the men.

191. From the Banda district of the Allahabad division, a special report has been received from the Civil Surgeon. **Its spread in the Banda district.** Dr. Ringer writes that the disease appeared at Kirwee on the 12th May, and that it cannot be attributed to any perceptible cause. It afterwards broke out in three different places widely removed from each other, and no pilgrims having any traces of the disease are said to have passed through at the time; other facts weighing against the contagious theory of spread are also given. Two villages, for instance, have suffered severely, while an intervening one has escaped. In some small villages again, removed from any road or line of communication, individual cases have occurred, and yet no epidemic broke out.

192. Futtehpore almost entirely escaped; but in the Cawnpore district the disease was more severe, 1,816 deaths having been attributed to it. **A few cases in Cawnpore cantonment.** In the cantonment also a few cases occurred, one among the Native soldiers in June, three amongst the Europeans in May, and two in July.

193. From Oude the information received is generally scanty and wanting in details. **Cholera in Oude: information imperfect.** An interesting summary of all the facts which could be collected regarding the appearance of the disease in the province, both as respects the ordinary population and the troops, has been given by Dr. Innes, the Deputy Inspector General of Hospitals Her Majesty's British Service. Without detailing what occurred in each district, the progress of the epidemic may be described, first, as regards the people generally, and secondly, as regards the military cantonments.

194. The prevalence of cholera along the Terai land, at the foot of the Kemaon Hills, and the spread of the disease to Sir Jung Bahadoor's camp, have already been detailed. **Its appearance among the people generally.** Whether the return of his stricken followers had any thing to do with the importation of the disease into Oude does not appear, but it is stated that, "during the months of February and March, cholera was very prevalent all along the Himalayan Terai, skirting the northern part of Oude and also of Goruckpore." As early as the 27th of March the disease appeared in the Central Jail at Lucknow, and nearly at the same time in the

Lunatic Asylum. On the 29th there were two more cases among the prisoners, but the disease did not spread among them to any extent. Out of a strength of 1765, there were eleven cases and only one death. The jails of Oude were generally exempt, and none suffered severely except that at Seetapore. How far the disease prevailed in the various populous towns and villages of Oude, there is little evidence available. The Civil Surgeons of Baraitch, Fyzabad and Seetapore, all report that it was epidemic in these parts of the country in April. In Roy Bareilly it was not so severe. Both in Oonae and Pertabghur, it is said to have broken out in May and again in September. The Civil Surgeon of Oonao remarks that "it was observed in many places widely separated at or about the same date."

195. In the city and district of Lucknow the disease was for a time very rife. Two cases are noted as having occurred
The epidemic at Lucknow. in March, 3 in April, 15 in May. In August the number had reached 1,396. The disease then declined, and in December there were only 29. The total number of persons supposed to have died in the city and district taken together was 2,364. No connection could be traced between the epidemic and the return of pilgrims; the first noted case, indeed, both in the city and jail, took place before the fair had been held.

196. Two facts are noted by the health officer of the city of Lucknow as pointing to "some general influence acting as
Evidence against theory of contagion. a cause on organisms placed under similar conditions." The first is that, "among the number of deaths, there was pretty nearly an equal number of males and females above 10 years of age, and pretty nearly an equal number of boys and girls of 10 years old and under." The second is that "it does not appear that in those parts of the town which are in the immediate vicinity of filth depôts the inhabitants have suffered more than those of other parts. In those which immediately surround the two largest and worst there were no deaths reported in June."

197. The epidemic in the Hurdui district occurred at the town of Sun-decla in the months of July and August. It is
The disease at Hurdui. attributed to defective drainage and to the fact that three of the tanks had overflowed and carried a quantity of putrid animal and vegetable matters over a part of the town. No clue to any introduction of the disease could be found.

198. The first case of cholera among the European troops in Oude was
Its occurrence among the European troops at Fyzabad. at Fyzabad on the 28th April. Three men, three women, and three children were its victims. The medical officer expresses "his opinion that it was brought to the married quarters by the punkah coolies. The whole of the punkah-pulling establishment supplied to the regiment came from the moveable column, except those for the married quarters Nos. 18, 19 and 20 barracks. The moveable column, be it here observed, is a fixed establishment maintained by the commissariat for various duties within cantonments. During the hot season they are employed in pulling punkahs and watering tatties. The Natives

forming this column lived within cantonment limits, and so, up to date of commencing punkahs, within a circle altogether free from cholera. The usual time for commencing punkahs is 15th April, but it so happened this year that a succession of dust and thunder-storms, with occasional rain, commencing on the 12th, lowered the temperature, so that artificial means were altogether unnecessary until the 24th. The punkah-pulling establishment, however, had been collected on the 15th, but the coolies finding they were not called upon to work stole away and dispersed to their homes in the neighbourhood. When required again on the 24th they had to be hunted up from their villages, and as by this time cholera had become general, and especially so in the Gondah district, on the other or north side of the Gogra, there can scarcely be a doubt that some of them came from infected villages. Punkah-pulling was commenced on the 24th April at the married quarters; on the 27th the first case of cholera, or more correctly, choleraic diarrhoea, occurred. Similarly in 1865, when the disease attacked the Regiment, punkah-pulling commenced on the 15th, and cholera appeared on the 18th, or three days after the exact time. I have, on two other occasions, witnessed the disease occur after undoubted communication with the infected. That this year the disease did not attack 18, 19 and 20 barracks, which were supplied with coolies from the same source as those sent to the married quarters, does not, I conceive, militate against the above conclusions. The poison required a nidus for its germination, and that it should have found this in the low, crowded, indifferently ventilated and filthy (this last almost of necessity, in this instance, because of the children) married quarters, and not in the lofty, clean, well ventilated men's barracks with ample cubic and superficial space, need excite no wonder. Nor is the opinion materially opposed by the fact of a married couple (Private Joseph Manelly and Sarah Manelly) occupying the end room of No. 1 barrack, and with coolies supplied from the moveable column, being attacked. These people occupied one small room with two children, and they were notoriously filthy. They both, and they only recovered, which is perhaps the best evidence that, with them the poison, from whatever source derived, was not so virulent as in the married quarters. The wife was first seized at 3 A. M., the attack commencing without any premonitory symptoms. She was brought to hospital at 6 A. M., removed into a tent, and attended by her husband, who was seized at 3 P. M. the same day."

199. At Seetapore there were eight cases among the Europeans, four of them in August, and four in the month following. Among Europeans at other stations in Oude. At Lucknow the disease did not amount to an epidemic, only eleven having been attacked out of the large garrison of 2,535 soldiers. In regard to only one of them was there any evidence whatever of the communicability of the disease, and that was in the case of an Assistant Apothecary who had been unremitting in his attendance on a sick soldier. He had for some time previous been suffering from chronic diarrhoea.

200. In only two of the stations in Oude were the Native soldiers attacked, and in neither of them did they suffer to any considerable extent. Among Native troops in Oude. In Lucknow there were five cases, two in June and three in July; at Seetapore three, two of

which occurred in August and one in September. Of these eight cases, seven were fatal.

201. The Jail at Seetapore was the only one in Oude which suffered to any great extent, and the epidemic here was more severe than in any of the jails of Upper India. The particulars of its occurrence are thus noted by the Civil Surgeon Dr. Ellis—
Outbreak in the Seetapore Jail. “The first case of cholera that occurred among the prisoners was on the 15th of August. Between that date and the 1st September 53 cases occurred. Of these 13 were fatal. The first case was from the temporary jail, that is, the man slept there at night, but he worked at blanket-weaving during the day in one of the new barracks. Fourteen other cases were from the temporary jail. The remainder from the different barracks, not one of which escaped. A cholera hospital was established in the temporary jail, and the men who had previously been confined there were moved out into camp about two miles from the jail. With these were sent some from each of the barracks, *viz.*, those who were weak and sickly, in all about 200 men, and on the disease appearing in camp, the patient was removed to the cholera hospital. Four such cases occurred and the camp changed. The barracks were cleaned and disinfected, and every precaution taken to keep the diseased apart from the other prisoners.”

202. In the large central prison at Benares not a single case occurred throughout the year. The European troops stationed there were also altogether exempt. Among the Native soldiers only three cases occurred in March and one in May. The first case in the city of Benares occurred on the 23rd March in one of the dirtiest, worst-drained, and most thickly-populated parts. “As far as could be ascertained,” the Civil Surgeon Dr. Cockburn reports, “not a single case has occurred among the pilgrims passing through from Hurdwar. Those attacked have been residents of the place or pilgrims from Bengal, of whom there was a considerable influx during the early part of April.” In the district of Bustee the disease was more widely spread. The Collector remarks—“Cholera was most severe in the northern part of the district, and this I ascribe to Jung Bahadoor’s camp having been attacked by cholera on its return from the plains a few months back, when some of the camp-followers spread the disease to the villages on the Nepal frontier, and from thence it spread into this district.”

203. No particular history has been received regarding the extent of the disease in the other portions of the Benares division, but as the district of Goruckpore lies contiguous to the State of Nepal, the very interesting particulars which have been received from Dr. D. Wright, the Residency Surgeon at Katmandoo, may now conveniently be considered. From the 19th April to the middle of May a few scattered cases; it appears, occurred at Katmandoo, but no alarm was created. Towards the end of May and beginning of June the disease raged at Goorka, a town about 60 miles to the west of the Nepal valley. Cases then began to occur daily in Katmandoo, and by the 18th June the disease was

fairly established and continued till the end of September. It is difficult to form a correct estimate of the mortality, but not less than 2,500 deaths are supposed to have taken place. When Sir Jung Bahadoor was in the Terai in the cold season, cholera, as has been already mentioned, broke out in his camp, but before the return of the expedition, the disease had entirely disappeared from his camp, and no cases occurred in the valley at that time.

204. But although the epidemic does not appear to have been introduced at that season, the opinion of the Residency Surgeon on the subject of its after importation is very decided. "I think," he says, "that there can be no doubt that in Nepal, as well as throughout Hindoostan, the cholera was this year introduced by the pilgrims returning from Hurdwar, whose numbers, as will be shown hereafter, must have been upwards of 1,000. At any rate it made its appearance to the westward shortly after the Hurdwar fair in the end of April, and it had reached Goorka in May, whence it was not long in finding its way into the valley of Nepal. The rulers of the country are well aware that the disease is introduced into the country by pilgrims and travellers, and that it is fostered by filth." The following opinion of the Minister to the Resident is remarkable, as it embraces the views regarding the spread of the disease which are now entertained by the highest sanitary authorities:—"Cholera is a plague sent by God. It spreads by intercourse with pilgrims, traders, &c. It is a catching disease. It does not spread much in clean places, but it spreads much in unclean places."

205. In the two divisions of Allahabad and Benares no connection can be traced between the return of the Hurdwar pilgrims and any increased prevalence of cholera among the people. In Behar and Lower Bengal, such a connection, therefore, could hardly be looked for. Of the extent of the disease in these provinces, all that can be ascertained is contained in the statistics of the jails and military cantonments they contain. Behar lies on the verge of the endemic area of cholera, if not actually within its limits. In the Patna, Deega, Arrah, and Mozufferpore Jails, cholera prevailed to a considerable extent during 1867. In the first two mentioned prisons the epidemic was severe. The Superintendent, Dr. Jackson, reports that he is "satisfied that the outbreak originated in the jail," and that "there was no direct proof of contagion throughout the outbreak, not a single mehter was attacked, and none of the hospital attendants."

206. In a few of the jails of Lower Bengal cholera was somewhat severe, but, as a whole, their chief sanitary feature is the unusual immunity from the disease which they enjoyed. In this group the lowest admission-rate from the disease during the previous eight years had been in 1865, when it was 23·8 per 1,000. In 1867 the ratio was only 17·9. It is not a little remarkable that both 1861 and 1867, which are distinguished by a comparatively low ratio of mortality from cholera in the Bengal jails, have been marked by the two most severe and widely spread epidemics of the disease over Northern India of which there is any particular record. In 1860 and 1866, the years immediately preceding these epidemics, the prisoners in Bengal suffered much more than usual.

207. In the Monghyr district cholera became prevalent in April.

Apparent importation into Monghyr Jail.

The history of its appearance in the jail is thus recorded by Dr. Cameron—"The epidemic in the jail seemed to have arisen from the admission of a prisoner from a part of the district where cholera was prevalent. There was no cholera in the neighbourhood of the station, the prisoner was attacked on the day of his admission, and within a few days the disease appeared in an epidemic form in the jail. It did not spread beyond the walls." This narrative is of particular interest in connexion with the question of establishing a system of quarantine in the Bengal jails.

208. At Jessore, in March and April, the epidemic was very carefully

The epidemic at Jessore.

observed by the Civil Surgeon Dr. McLeod, and has been fully reported. Out of about 200 persons attacked, 60 perished. The meteorological observations show that "the period of appearance and gradual spread of cholera was marked by low barometer, high thermometer, low dew point, small humidity, great evaporation, strong wind and rapid drying up." There was no reason to suppose that the cholera was imported or owed its rise to any other than strictly local causes. "Certain conditions of an insanitary kind prevailing among the Natives, no doubt greatly assist its development among them, principally (a) The close crowded *barries* in which they live; these generally consist of a square of houses nearly joining, surrounded by a thick hedge and in most cases buried in jungle. (b) The large quantity of underwood surrounding the houses. (c) The shallow filthy holes and tanks which dry up in the hot weather, and which must emit in that process the most noxious putrefactive emanations. (d) The abominable system of latrines, which consist of a couple of bricks on each side of a hole into which the fæces are deposited, sometimes open and sometimes enclosed by a piece of matting; these latrines are never disinfected, seldom or never cleansed, and are generally situated between the houses and the enclosing hedge. (e) The bad unfiltered water which is drunk and used for cooking food." Throughout the district there were two epidemics, one in March and April, the other in November and December, the mortality from which must have been considerable. Regarding the origin of the disease, Dr. McLeod observes:—"The circumstances of the general outbreak of the disease throughout the district and of particular invasion of villages, go against the theory of contagion. In the former case, the disease sprung up in numerous independent centres simultaneously or nearly so, and in the latter case several members of a family or several houses in a village were attacked, while other members or houses escaped without any precautions whatever being adopted against the spread of the disease. It is difficult to see how in such a case the majority of the population should not succumb to the disease if it is contagious. Besides there was good reason to believe that its severity was materially checked by a heavy fall of rain in April, an event which if it were contagious could hardly happen."

209. At Pooree the epidemic is specially worthy of notice, because, although the disease was brought by pilgrims, it

Pilgrims suffering from cholera did not spread the disease at Pooree.

does not appear to have spread from them to the inhabitants. The Magistrate reports:—"The dis-

ease never assumed serious proportions. It was brought here by pilgrims from the Gurjat Hill Tracts, who performed their journey to Pooree during an unhealthy season, and who are notorious for their filthy habits, their dirt, their extreme poverty, and utter carelessness about their health. Cholera appeared among them and confined itself almost exclusively to them. Although there were thousands of them in the town, the deaths hardly ever exceeded twenty in a day, and this only for a few days. A very few of the towns-people had the disease, but the number was most trifling. The disease never in this town assumed a serious appearance, and disappeared almost altogether with the pilgrims who brought it. It has now, and some days past, ceased altogether." Pooree is held in peculiar veneration by the Hindoos as the seat of the temple of Juggernaut, and is visited by crowds of pilgrims from all parts of India. The festivals, which are numerous, are thus detailed by the Sub-Assistant Surgeon Uddy Chund Dutt:—

" 1st.—The Snan and Ruthjattras for the bathing and car festivals, in June and July.

" 2nd.—The Dolejattras or the swinging festival, in February and March.

" 3rd.—The Punchock and Kartikamasee pilgrims, in October and November.

" 4th.—The Mukkursunkrant, about the middle of January.

" 5th.—The Sewrattree Mela at Lokenauth Ghaut, in February.

" 6th.—The Chundunjattras or festival in the Norender Tank, in April.

" Of all these the Ruth and Dolejattras are most important. The outbreak in the past year occurred in the months of October and November, and was one of the most severe on record. It is important to observe that there was no cholera previous to the arrival of the pilgrims, and that 'the epidemic commenced ten days after the pilgrims commenced to arrive and four days after the occurrence of cholera on the road to Pooree.' "

210. The remarks of the Magistrate of Pooree have been extracted from
 Opinion based on this fact. a letter addressed by Dr. Mouat, Inspector General of Prisons Lower Provinces, to the Government of Bengal. They are quoted by him, and are made the subject of the following remarks—"The evidence afforded by this communication is extremely interesting, as proceeding from a non-professional observer, who has no theories to uphold, and who simply observes and records facts as they come under his notice. The facts noted are at variance with the conclusions of the Constantinople Conference, that cholera originates at places of pilgrimage, and is extended from those places as great centres of the production and propagation of the disease, and that the disease is communicated from man to man by contagion. In this instance, there can be no doubt that the cholera was carried to Pooree, and did not originate at that place, that it was mainly confined to those who brought it with them, and that it did not spread among the many thousands gathered together in the town, as must have been the case had the malady been really contagious."

211. The question is, however, not so easily disposed of. The evidence of one witness regarding a single epidemic at one particular place appears to be hardly sufficient basis on which to rest any general conclusion. Nor are facts wanting in regard to this very festival which strongly support the opposite view of the case. "Since the breaking up of this mela," writes Dr. Stewart in his very interesting report on the disease in the neighbouring district of Cuttack, "cholera has marked the track of the pilgrims wherever they went. Every Native acknowledges the fact that pilgrims to or from Pooree carry cholera with them, particularly during the large festivals." "It would appear that pilgrims returning home suffer most and carry most mischief with them." "Pilgrims are a terror to the Native population; they are known by the red-stained cloth they wear, and are avoided by all who see and know them. Natives fully believe that pilgrims are sources of infection."

212. In the appendix to Dr. Stewart's report eight separate cases are given in which the disease was attributed to importation by pilgrims. Of these six may be cited. The quotation is long, but the question is too important to admit of any valuable evidence being omitted. "About 10th October thirty persons left Susang Killah, four miles from Cuttack, for Pooree, to be present at the Poornamee or full moon festival for that month. They arrived before the festival came off, and remained three or four days waiting. Before the feast cholera broke out amongst them. The disease was present in Pooree when they arrived; * many of their numbers dying, they waited no longer, but returned as fast as they could. Cholera followed them. When they reached the ghaut at Dhrosaye, west of Cuttack, there were only eight left. Two were then ill and taken to the village of Dhrosaye, they died and were buried there. Six only arrived at Susang to tell the tale; of these one died. Susang is a small village and held originally about forty souls. Dhrosaye, the village at the ghaut, holds about 150. Here the disease showed itself; none existed before the two men died and were buried. After this, cholera appeared among them; eight persons have died.

"Chassaparrah (another crossing place for pilgrims), here one ferryman and two villagers were attacked, and died.

"A bearer went with a message from Cuttack to Dhurmsalla, on the Calcutta Trunk Road; pilgrims were going both ways, chiefly returning; cholera was amongst them. After he returned to Cuttack, he got cholera and died; his son died the following day, and a neighbour two days after.

"The instance given by Mr. Goadby is rather striking. He has charge of the Piplee Orphanage. At Piplee the two great roads leading pilgrims from the north and west of Hindoostan meet at this spot. Mr. Goadby has given me the following history of an outbreak which came under his immediate observation. Alluding to the Poornamee festival, which took place about the 13th November 1867, he speaks of pilgrims coming on the Sumbulpore road. He says they began to come in large numbers 'about the beginning of October,

* At variance with the Magistrate's account, but it does not affect the question.

and continued to come until the middle of November. Whether they passed through places infested with cholera or not I cannot say. They came chiefly from the Upper and Central Provinces. I cannot say whether it existed in their homes before they left or not. The instance I refer to, which came under my own observation, took place at the end of last month and the beginning of this present month (November) in a village about two miles from the junction of the Khoordah and Pooree roads, the former leading from Sumbulpore and the Central Provinces. In the village near which the outbreak took place I have a school belonging to our Mission. No disease existed on the spot previous to the arrival of the pilgrims, nor had there been any outbreak there for the last three years. And *three years ago* and in *other previous instance*, it was during an influx of pilgrims to the *pooree festival*. As to when it first appeared I have no information. The facts, as far as I can collect from the school-master, are as follow :—The band of pilgrims reached the above-mentioned school-room situated by the roadside near the village of Bhatapore with cholera amongst them. One or two of their party had previously been left behind, having been attacked by the disease. During the night several more were attacked with such violence that they were unable to proceed. On receiving this information from the school-master, I ordered the school to be closed, as the sick among the party had been laid in the school-room verandah. They remained there for upwards of twelve days, and during that time, among those attacked ten or twelve died. A day or two after their arrival the disease broke out in the village near to which several of their number were repeatedly going to purchase wood, rice, cooking vessels, &c. Among those attacked in this village, half a dozen died. But after the departure of the pilgrims, no other case occurred. No other village in the neighbourhood was visited by cholera, neither has cholera prevailed anywhere excepting in the villages visited by the pilgrims. Up to the above time, as far as we can ascertain, cholera was confined to the pilgrims *on their way to Pooree*. Instances have, however, since occurred among the returning, as well as the going pilgrims.'

"Head Constable Soodam Roul was stationed at Tanghy out-post on Calcutta road, ten miles from Cuttack; was there in September and October 1867. Pilgrims commenced to come about 10th October. They were chiefly Bengalees and Ooryas. For every two or three men there were twenty women. There was no cholera at the time either in the village or amongst the travellers. Nor till they returned from Pooree did cholera appear. The returning men were seen about 14th or 15th October. Fifteen or sixteen were reported dead in Tanghy out-post up to end of October. The pilgrims said that much cholera prevailed in Pooree at the time. The out-post station was in the centre of the bazar. Cholera cases were very numerous; sick and dying were carried along in carts, others left on the wayside. This witness was himself attacked with cholera on 6th November and brought into Outtack, where he had a very narrow escape.

"A Bundarri (barber) left Jajipore about the beginning of November 1867 for Cuttack. He belonged to Jajipore. Cholera was prevalent on the way to Cuttack. He put up in a *bassa* or house where rooms are let to travellers.

Thirty-six hours after arrival in Cuttack, he took ill with cholera and died. "A traveller who occupied an adjoining room took ill on the 9th and was carried away from the place by his companions. On the 10th, a prostitute occupying a house opposite took ill and died on the 12th. A cazee lived three houses from the *bassa*. His wife was attacked with cholera on the 16th and lingered till the 21st. To visit her in sickness two Mussulmance women came from other parts of the town and remained with her. All three died, the two visitors dying before the cazee's wife."

213. In Cachar cholera commenced in March and was of a very virulent type. Dr. Barker is of opinion that the disease ^{Apparent importation into Cachar.} is introduced by coolies coming from Calcutta for the tea plantations. "That the disease is propagated by human intercourse," he remarks,—“I could advance several instances. That it invariably makes its appearance here after the arrival of batches of coolies amongst whom cholera was prevalent, is also beyond doubt, but it is difficult to show that actual contact had taken place, or was necessary in any of the cases that have come under observation. On the night of the 23rd May 1867, three of the prisoners in this jail were attacked with cholera; all succumbed within twenty hours. There had been no cholera in or near the station for several weeks prior to this outbreak, with the exception of twelve cases that were admitted into the charitable hospital on the 19th instant from a batch of coolies landed under the Importation Act. On the 20th and 21st several of the prisoners were engaged in burying the fatal cases, and on the 23rd, as stated above, the disease broke out in the jail; none of the men who were in actual contact with the deceased were affected. Another instance that occurred recently affords some interesting facts. On the 17th January 1868, a wing of the 7th Regiment Native Infantry arrived here in country boats, having had ten deaths from cholera during the voyage from Dacca. The boatmen suffered even to a greater extent. Three days after they landed the disease broke out amongst Mr. Smeal's people, who live within a hundred yards of the ghaut. I have carefully ascertained that seven were attacked and five died. Besides these a vakeel, a court peon, and a boy also succumbed; they were residing about fifty yards to the west of Mr. Smeal's out-houses. None of those attacked appear to have had direct intercourse with the men of the regiment or boatmen, as they were aware of the existence of the disease, but all were in the habit of drinking the river water which flows towards their houses."

214. The other districts of Lower Bengal do not call for any special remark. General testimony is borne to the fact ^{Cholera in other parts of Lower Bengal.} that cholera was less prevalent in 1867 than in ordinary years, that its appearance was generally simultaneous at different parts of the same tract of country, and that any attempt to account for its course, either by the direction of the wind or by communication, in most cases altogether failed. Dr. Wise of Dacca mentions one case of apparent importation of the disease by a person coming from an infected to a previously healthy locality, and another of the same kind is recorded by Dr. Greene of Tipperah. These, however, are quite exceptional, and the general belief of the medical officers appears to be that cholera is due to strictly local causes.

SECTION III.

THE PREVENTIVE MEASURES ADOPTED AND THE RESULTS OF THE EPIDEMIC.

215. The nature of the arrangements which were made at the Hurdwar Fair with a view to prevent the occurrence of any epidemic disease have already been detailed. As soon as it was known that the cholera had unfortunately appeared there, intimation of the fact was telegraphed in every direction without delay. The measures which were adopted to prevent the spread of the disease will now be considered in succession, as they regarded the population generally, the prisoners, and the European troops.

216. The Government of the Punjab had already provided for such a contingency. The precautionary instructions which were issued are fully detailed in the general report on the epidemic in that province by Drs. Smith and Dallas. So early as the 13th March a circular order had been issued to the Commissioners of the Delhi, Hissar, Umballa, Jullundur and Lahore Divisions, directing that, as it was probable large numbers of Hurdwar pilgrims would pass along the more important lines of communication, in the districts of their respective divisions, during the next two months, in places where such pilgrims assemble in large bodies, all practicable measures should be taken for carrying out proper conservancy arrangements, for preventing undue crowding, for maintaining cleanliness, and securing a supply of good food and wholesome water. Commissioners were further to arrange that immediate intimation be conveyed to them of the appearance of epidemic or infectious disease amongst bodies of pilgrims. In the event of such disease appearing, measures were to be taken for preventing the entrance of the disease into towns and cities by the establishment of quarantine, and for providing those attacked with medical assistance. It would be time to warn the districts above Lahore when the stream of pilgrims commenced to flow towards that part of the province." The Government, having heard it reported that cholera had appeared among the pilgrims at Hurdwar before the receipt of the information conveyed by the Superintendent Dehra Doon, enquired by telegraph, on the 16th April, of the Government North-Western Provinces, whether the report was true, and received next day a reply to the effect that, though the fair had passed off without sickness, after its close cases of cholera had occurred, and that every precaution had been taken to prevent its spreading. "It was hoped these precautions would be successful. On receipt of this information, the Commissioner of Umballa was by telegraph informed of the circumstance of the disease having appeared, and instructed to take measures to prevent its being introduced into Umballa. On the 18th it was reported that cholera was rife among the pilgrims

towards Jugadree. On the 19th it was reported to be still severe ; and on the 20th, to be moving forward across the Gugger River. Two deaths had occurred in the cantonments of Umballa among the pilgrims : the deaths were very numerous. The stream of pilgrims passing upwards was very large : sixty thousand had passed the Gugger River the day before this report. It was now time to take more active measures for the protection of the districts above Umballa and of Lahore. Accordingly, on the 20th, the Government issued a circular order to the Commissioners of Lahore, Umritsur, and Deputy Commissioners of Jullundur and Loodiana. In this order the following instructions, in addition to those circulated on the 13th March, were given. All Hurdwar pilgrims arriving at the bridge-of-boats on the Sutlej at Phillour and Ferozepore, and that over the Beas at Wuzeer Bhullar, should be stopped on the left bank and examined by medical officers ; all having choleraic symptoms should be detained and treated in temporary hospitals to be formed at those places. Hurdwar pilgrims who had been allowed to pass the Beas should be again examined a little distance from Umritsur, and any affected with choleraic symptoms detained and treated. District officers were to carry out these arrangements in communication with the Civil Surgeons and Police, and to incur the necessary expense. The Sub-Assistant Surgeons attached to the dispensaries of Jullundur, Ferozepore and Umritsur were to be sent to the several bridges-of-boats above mentioned. Deputy Inspectors General of Hospitals would be applied to for native doctors, for service in the districts of Jullundur, Umritsur, and Ferozepore. Daily reports of the sanitary condition of the pilgrims were to be sent direct to Government. Subsequently it was ordered that pilgrims detained were to be provided with wholesome meals gratuitously if they were unable to pay. Copies of these orders were also sent to the districts above Lahore for information and guidance, together with copies of those issued on 13th March. Officers were told of the appearance and gradual approach of cholera, and directed to make their preparations at once. The disease was steadily moving on towards Lahore. Special measures for the protection of that large city and military cantonment had therefore become necessary. Accordingly, on the 23rd, the Commissioner of Umritsur was, by telegraph, instructed to arrange that all Hurdwar pilgrims for Lahore should go by the Grand Trunk Road and not by train. The Deputy Commissioner of Lahore was directed, in communication with the Civil Surgeon and District Superintendent of Police, to take measures at once for forming a temporary hospital at or near "Chubbeel," on the Umritsur road, but *not* on the ordinary encamping-ground,—for forming a sanitary cordon of Police, chowkeedars, &c., to divert all the Hurdwar pilgrims from entering the city, and placing those who are residents of the city in quarantine outside the cordon. An Assistant Commissioner was to be deputed to carry out these arrangements. Everything was to be held in readiness for carrying out the same arrangements on the Ferozepore road so soon as cholera made its appearance along that route. The Principal of the Medical College was directed to place a Sub-Assistant Surgeon at the disposal of the Deputy Commissioner. Arrangements were made with the Railway authorities to pass all pilgrims for Mooltan and the stations on that line through, from Umritsur, so as not to allow them to enter Lahore. The Officer Commanding at Meean Meer was addressed, and copies

of all instructions and reports were forwarded for his information and guidance and it was suggested to him that, for the present, soldiers should be prohibited from wandering in the bazars or vicinity of the bridges-of-boats, and that extra stringency should be enjoined on the sale of spirituous liquors." During the prevalence of cholera in the various districts, the Government forbade the holding of large fairs in such districts.

217. "The Maharajah of Cashmere had passed through the Punjab on his pilgrimage to Hurdwar, with a camp nominally of **The camp of Maharajah of Cashmere diverted.** about 5,000 strong, but in reality largely in excess of that number. His return to his own dominions would necessitate his again (with this large body of followers) passing through the British territory; a source of considerable danger thus arose. On the 17th April, it was reported by the Civil Officer with the Maharajah, from Saharunpore, that cholera was in His Highness's camp. In consequence he abandoned his idea of going with his entire camp to Puttialla. Instead of this large camp passing up by way of Umballa, the Maharajah was prevailed on to allow the main body to move towards Jummoo, *viâ* Roopur and Gurshunkur to Jusrota,—there to be broken up; the main body to proceed on through the Hoshiarpore district, and away from the Grand Trunk Road; and an escort, stated to be 300, but in reality 3,000 strong, to proceed with the Maharajah, *viâ* Loodiana, Jullundur, and Buttala, to his own kingdom. Eventually the Maharajah gave up marching, and, leaving his camp, proceeded by dâk to Buttala, the escort marching up the Grand Trunk Road. They were subjected to quarantine, and their sick treated, at Phillour in the Loodiana, and again in the Jullundur, district."

218. The manner in which the general instructions of the Government were carried out in different districts need not be **Medical arrangements.** detailed. They necessarily varied* with the particular circumstances of each,—the geographical features of the country, the relative position of large rivers which offered natural barriers to the advance of travellers, and the ferries and fords over which could be easily guarded, the direction of the main roads and their relation to the larger cities of the district, and to some extent also with the number of the returning pilgrims. The endeavours of the medical and district officers were strenuously directed in the first place to afford relief to the sick. For this purpose the necessary cholera hospitals were established in which those affected were carefully tended and treated, and simple medicines in the form of the well known cholera pills were freely distributed. The camps were visited regularly and frequently by medical officers, and suspicious cases detained.

219. The second object was to render the return of the pilgrims as little dangerous as possible both to their own **Sanitary arrangements.** homes and those portions of the country through which they passed. To this end extra conservancy arrangements were made at the halting places. Cordons of police were posted to divert the stream from the larger towns. Quarantine camps were established, in which the pilgrims were detained in some places for 48 hours, in others as long as five days. Before being

allowed to re-enter their town or village, they were obliged to wash, and their clothes were fumigated. The bodies of the dead were burnt or buried as soon as possible, and the clothes of all persons who had been attacked were destroyed. Food of good quality was provided and supplied gratis to those who were too poor to pay for it. The water supply was carefully supervised, shelter provided, and, in every arrangement that was carried out, the comfort and convenience of the pilgrims were considered as much as possible. The arrangements generally were under the management both of the medical and district officers, who were indefatigable in the discharge of their difficult and delicate duties.

220. Nor were the officers in the North-Western Provinces less alive to the danger, or less active in doing all that could be done to avert it. In the districts which lie nearer to Hurdwar especially, quarantine, sanitary cordons, cholera hospitals, and general sanitary supervision were had recourse to. It will now be necessary to consider what results are believed to have attended these measures.

221. The opinions of the civil surgeons are generally to the effect that much good resulted from them. A few quotations from their reports will sufficiently illustrate this. At Ferozepore the arrangements are said to have been attended with "very marked success." In Kurnaul city "tolerable success" is reported. The medical officer of Hoshiarpore considers that they were "successful in preventing the spread of the disease." The town of Sirsa is said to have "enjoyed entire immunity from its ravages. This doubtless is owing to the sanitary and precautionary arrangements having been strictly enforced." At Goordaspore there was "great success; the spread of the epidemic was checked, and the mortality was comparatively small." At Hissar it is said that "the disease would have prevailed more and perhaps assumed a violent type had not timely precautions been employed." The Commissioner of Umballa considers that the sanitary cordon was "most effective." Dr. Verchere, in his second report regarding the epidemic in the Jullundur district, writes:—"It is worthy of record that none of the principal towns or villages became attacked with cholera to any considerable extent. To all these places orders had been sent by the Deputy Commissioner that quarantine should be established for the returning pilgrims, and the orders were more or less strictly carried out. Imperfect as the arrangements probably were at several places, yet the results were satisfactory. It was to the smaller villages and *mouzahs* left quite unprotected that the disease was nearly entirely confined."

222. From the North-Western Provinces opinions to the same effect have been received. The civil surgeon of Budaon writes, "there can be no doubt that the measure of preventing pilgrims who were not residents passing through the sudder station had the most salutary effect. This accounts for the comparatively few cases that occurred in Budaon city." The Magistrate of Bareilly is of opinion that "the measures taken went a great way in checking the spread of contagion." The civil surgeon of Moradabad states that, "judging from the results the measures

taken were very successful." Of Roorkee Dr. J. P. Walker says "the preventive arrangements may be fairly credited with the comparative exemption its inhabitants enjoyed."

223. In other cases even where the disease has not been violent the share which the preventive measures had in attaining this result is spoken of with caution. It is supposed that they have been attended with good, or it is presumed that without them the course of the epidemic would have been more violent and fatal. In some instances again, testimony borne to the value of quarantine and other sanitary precautions has been subsequently modified by the after progress of events. In Rohtuck, for example, "up to the 27th May no case of cholera had taken place in the town. This immunity, I believe," adds Dr. Dickson, "may be fairly attributed to the measures enforced." Reviewing the events of the epidemic after the year had closed, he is of opinion that the preventive measures were attended with "little or no success." In Mozufferghur and Shahpore quarantine was at first believed to have saved the districts, but afterwards the disease appeared in them both.

224. To determine how far the preventive measures and the slight prevalence of the disease in certain places stand in the relation of cause and effect is a question of very great difficulty. There is a natural tendency in the human mind to attribute successful results to the efforts which have been made to attain them, and especially in regard to such a disease as cholera, whose erratic fitful course is so proverbial, it is extremely difficult, if not impossible, in the present state of our knowledge, to say with any accuracy what effect any preventive measures have had upon its progress, and how far after events would have been modified had no such measures been adopted. With reference to the general population of the country no reliable opinion can be formed on such a question, because there are no data regarding previous outbreaks of the disease with which the facts of 1867 can be compared. In considering the nature of cholera and the manner of its spread, the opinions of the medical officers and others which have been quoted on this question cannot be received as evidence, however interesting they are in themselves, and however valuable the grounds on which they are based may become in connection with the events of any future epidemics.

225. The number of cases of cholera which occurred among the civil population can never be accurately known, but an approximate estimate of the total mortality from the disease in the North-Western Provinces, the Punjab and Oude may be formed from the annexed statements.

Mortality among the civil population in the North-Western Provinces.

*Return of deaths from cholera and all diseases in the North-Western Provinces
for the year 1867.*

DIVISIONS.	Districts.	Population.	TOTAL.	
			Cholera.	All diseases.
MEERUT	Dehra Doon ...	1,02,831	877	1,035
	Saharunpore ...	8,66,483	877	12,575
	Mozuffernuggur ...	6,81,613	2,048	11,586
	Meerut ...	11,99,593	4,184	15,600
	Boolundshuhur ...	8,00,481	349	9,535
	Allygurh ...	9,25,538	1,104	9,500
	Total ...	45,76,539	9,439	59,831
AGRA	Muttra ...	8,00,321	773	9,146
	Agra ...	10,28,544	1,438	14,505
	Mynpoorie ...	7,00,324	678	8,875
	Etawah ...	6,26,444	120	5,716
	Farruckabad ...	9,15,943	611	7,811
	Etah ...	6,14,351	1,402	5,946
	Total ...	46,85,927	5,022	51,999
ROHILCUND	Bijnour ...	6,90,975	784	12,883
	Moradabad ...	10,94,969	4,249	20,454
	Budaon ...	8,89,810	796	11,302
	Bareilly ...	14,70,359	7,828	22,484
	Shahjehanpore ...	9,33,979	7,781	13,831
	Terai ...	91,802	622	2,547
	Total ...	51,71,894	22,060	83,591
ALLAHABAD	Allahabad ...	13,93,183	492	8,731
	Banda ...	7,24,372	2,534	11,718
	Cawnpore ...	11,88,862	1,816	13,542
	Futtehpore ...	1,81,284	712	8,572
	Jounpore ...	5,57,937	262	6,715
	Humcehpore ...	5,20,941	223	3,443
	Total...	45,66,579	6,039	52,721
BENARES	Mirzapore ...	10,54,329	365	8,093
	Benares ...	7,06,442	502	7,065
	Azingurh ...	13,85,872	872	6,701
	Ghazeepore ...	13,42,334	1,380	9,662
	Goruckpore ...	19,83,816	4,440	11,151
	Bustee ...	14,55,697	4,781	5,338
	Total ...	79,28,390	12,340	48,010
JHANSIE	Jhansie ...	3,57,774	...	3,020
	Jaloun ...	4,05,272	20	2,078
	Lullutpore ...	2,48,146	...	4,051
	Total ...	10,11,192	20	9,149
KUMAON	Kumaon ...	3,85,790	1,612	3,327
	Gurhwal ...	2,48,742	616	3,155
	Total ...	6,34,532	2,228	6,482
AJMERE	Ajmere and Mhairwarah ...	4,26,268	376	4,465
	Total ...	4,26,268	376	4,465
	GRAND TOTAL ...	2,90,01,321	57,524	3,16,248

226. The following statement, which shows the deaths from the disease in Deaths from cholera in the the Punjab, has been supplied by the Sanitary Com-
Punjab. missioner, Dr. DeRenzy :—

Statement shewing the estimated mortality from cholera in the districts of the Punjab during the year 1867.

Number.	NAME OF DISTRICTS.				Supposed popu- lation.	Deaths from Cholera.	REMARKS.
1	Ambala	10,35,488	2,617	Population of the districts has been given according to the new census, with the exception of Umritsur.
2	Umritsur	...	...	...	10,81,161	3,561
3	Bannu	...	...	...	2,87,547	632
4	Delhi	...	...	...	6,08,850	1,321
5	Dera Ghazi Khan	...	...	...	3,08,840	857
6	Dera Ismael Khan	...	...	...	3,94,864	232
7	Ferozepore	...	...	...	5,49,253	2,185
8	Gujeranwalla...	...	...	...	5,50,576	1,624
9	Gujerat	...	...	...	6,16,317	433
10	Gurdaspore	...	...	...	6,55,362	269
11	Gurgaon	...	...	...	6,96,495	3,118
12	Hazara	...	...	...	3,67,218	1,565
13	Hissar	...	...	...	4,84,681	3,265
14	Hoshiarpore	...	...	...	9,38,890	875
15	Jullundhur	...	...	...	7,91,761	739
16	Jhelum	...	...	...	5,00,988	857
17	Jhung	...	...	...	3,48,027	103
18	Khangra	...	...	...	7,27,148	1,802
19	Kurawal	...	...	...	6,10,927	1,652
20	Kohat	...	...	...	1,40,209	1,176
21	Lahore	...	...	...	7,88,902	2,095
22	Ludianah	...	...	...	5,83,245	1,538
23	Montgomery	...	...	...	3,59,437	498
24	Muzafferghur...	...	...	...	2,95,547	1,141
25	Mooltan	...	...	...	4,71,509	616
26	Peshawur	...	...	...	5,23,152	1,909
27	Rawalpindi	...	...	...	7,11,256	2,722
28	Rhotak	...	...	...	5,36,959	1,066
29	Shahpore	...	...	...	3,68,796	621
30	Simla	...	...	...	33,995	283
31	Sirsa	...	...	...	2,10,795	1,077
32	Sealkote	...	...	...	10,05,004	664
	TOTAL	...	...	...	175,86,232	43,146

227. The returns from Oude show that, in the different districts the deaths from cholera during 1867 have been as follow :—

Statement shewing the deaths from cholera in each of the districts of Oude during the year 1867.

DISTRICTS.						Supposed population.	Deaths from Cholera.
Lucknow	...	...	...	...	...	6,30,259	2,468
Luckimpore	...	...	...	...	..	7,31,661	12
Gonda ...	...	...	...	...	...	7,50,000	2,513
Fyzabad	...	...	...	...	...	10,38,195	2,339
Baraitch	...	...	...	...	...	5,70,778	3,383
Sooltanpore	...	...	...	...	...	4,33,016	76
Roy Bareilly	...	...	...	...	...	6,76,249	231
Pertabghur	...	...	...	...	...	7,21,739	42
Hurdui ...	...	...	...	...	...	9,09,984	364
Sectapore	...	...	...	...	...	7,43,235	319
Kheree	...	...	...	...	...	5,27,390	4,764
TOTAL						77,35,506	16,511

228. When the epidemic was prevailing an attempt was made in many of the districts to ascertain not only the returns of cases incorrect. deaths but also the number of cases that occurred, but the very marked disproportion which is exhibited in different parts of the country in regard to the ratio of mortality shows how unreliable these returns are. Again, both in the North-Western Provinces and the Punjab not a few cases are entered in every month of the year, and for that reason the monthly statement of mortality has not been considered in the history of the epidemic. Every disease which is attended with sickness or violent purging is apt to be returned as cholera.

229. The North-Western Provinces' statement shows a mortality of Total mortality among the 57,524 from cholera. The Punjab return gives people. 43,146 deaths from the same cause. The mortality in the three provinces stands thus :—

North Western Provinces	...	...	...	...	57,524
Punjab	...	...	...	...	43,146
Oude	...	...	...	...	16,511
Total					117,181

Giving a grand total of 117,181 persons amongst the ordinary population of Upper India who lost their lives from cholera in 1867. The ratio of deaths to population in the different provinces according to the figures given was in the North-Western Provinces 1·9 per 1,000, in Oude 2·4, and in the Punjab also 2·4. The returns cannot be regarded as strictly correct, and in India a good census is wanting, but they contain a fair approximation to the truth. The death-rate to those treated among Natives may be safely taken at about 50 per cent., and on this calculation the number of persons attacked must have exceeded 230,000.

230. Among the preventive measures adopted in the jails of the Upper Provinces, a modified quarantine has been imposed on all new prisoners. The system is confessedly imperfect, because a perfect quarantine is almost impossible, and also because suitable buildings have not yet been provided for carrying it out. But, imperfect as it is, most excellent results have attended its institution, and several instances have occurred in which jails have escaped epidemic visitations for the first time in the course of several years, by preventing the introduction of contagious disease. When cholera was known to be abroad particular attention was devoted to rendering quarantine as stringent as the imperfect means which existed would allow.

231. In only one instance during the late epidemic has a genuine case of cholera occurred in the quarantine ward of a jail. This was at Umballa. The man had just been received from Simla; he was immediately isolated, and proper means of disinfection used. In the Lahore Jail two cases of choleraic diarrhoea were discovered in the quarantine quarter, and if recent opinions are correct a person suffering from choleraic diarrhoea is as dangerous an arrival as a person suffering from cholera. The Inspector General of Prisons in the Punjab is of opinion that the benefit of isolation as a preventive to the extension of the disease amongst the prisoners has been "instanced in cases of the jails generally throughout the province and remarkably in the Central Jail at Lahore."

232. Considering the extent to which the disease prevailed among the free population, the comparative immunity which the prisoners enjoyed is very remarkable. In the North-Western Provinces, out of thirty-six jails only eleven were attacked, and of these only two, Allahabad and Shajehanpore, suffered with any severity. In four others out of the eleven only one solitary case occurred in each. No less than twenty-five escaped entirely, and many of these, such as Meerut, Benares and others, were large prisons in the centre of an infected population. In the Punjab, out of twenty-nine jails, eight were attacked, but in two of these the disease was trifling; twenty-one escaped entirely. Out of eleven jails in Oude, six suffered, but excepting at Seetapore the cases in each were few.

233. In 1861, out of an average strength of 17,393 prisoners in the North-Western Provinces, 524 died of cholera, or a ratio of 30·1 per 1,000. In 1867, the mortality from the disease has been 31 out of a daily population of 16,084, or 1·9 per 1,000. In the

Punjab in the year 1861, out of 11,185 prisoners 65 died of cholera, the disease being confined to the four jails of Rohtuck, Delhi, Umballa and Thanessur. In 1867 there were 41 deaths from cholera out of an average strength of 10,506. Two facts, however, prevent a fair comparison being drawn between the results of the epidemics of 1861 and 1867 among the prisoners in the Upper Provinces. The former year was one of famine and distress, and many were admitted into jail after having suffered great privation. On the other hand, the epidemic of 1861 was confined to a smaller area than that of 1867. Cholera in the former year did not extend beyond Lahore, and resumed its progress upwards in the year following. In estimating the comparative results of the two visitations these points must be kept in remembrance.

234. The comparative sickness and mortality from cholera in the several jails in the Bengal Presidency, arranged according to the groups given in Dr. Bryden's Tables between the years 1859 and 1867, are shown in the following statement :—

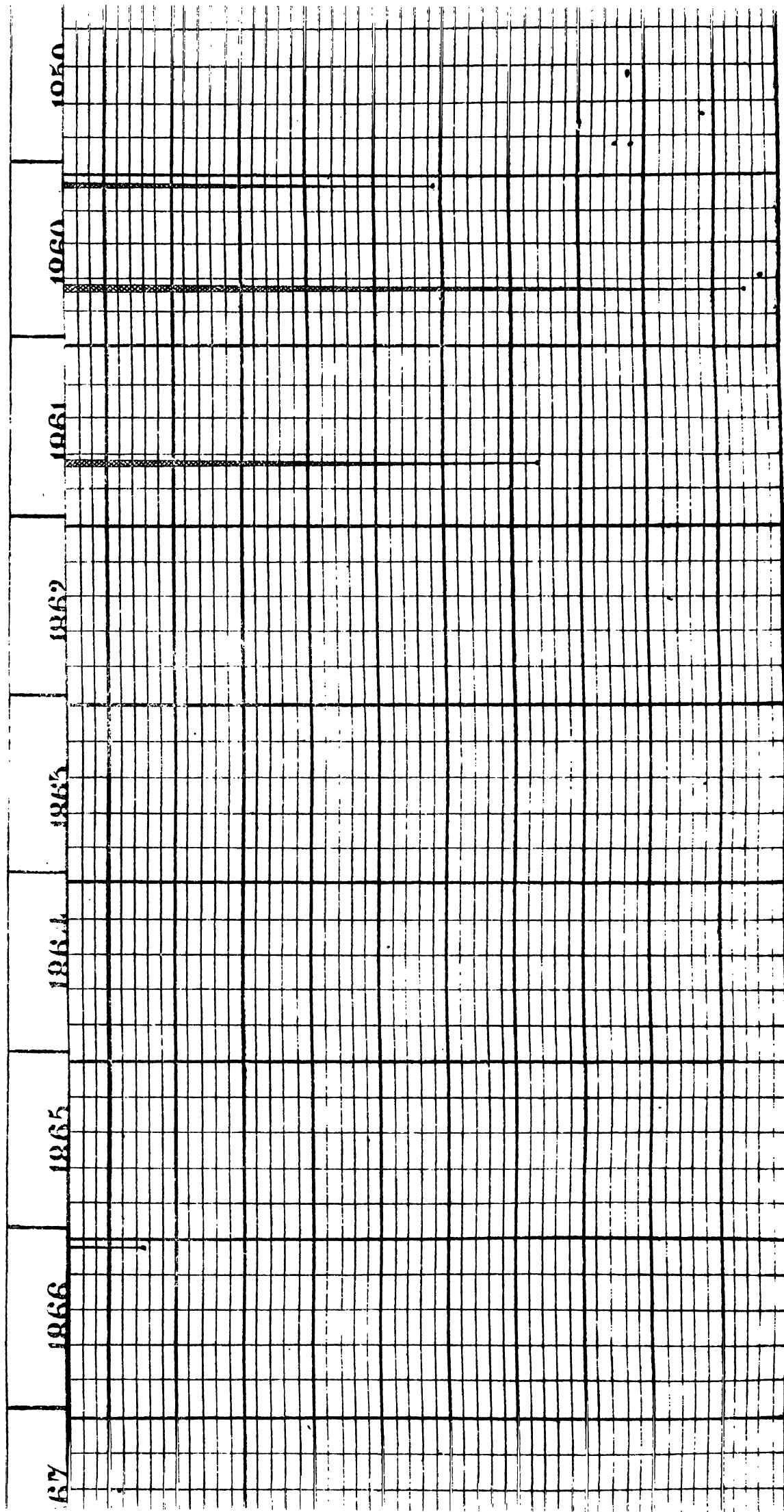
Statement shewing the admissions and deaths per 1,000 from cholera among the prisoners in the Jails of the Bengal Presidency from 1859 to 1867.

YEAR.	Bengal Proper and Assam.		Dinapore, Benares, Oude and Cawnpore.		Nagpore and Central India.		Agra, Meerut and Rohileund.		Punjab.		Total of Bengal Presidency.	
	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.
1859	40.6	18.95	21.5	12.55	1.0	.21	2.0	0	0.1	0	18.4	8.38
1860	84.5	38.29	47.3	20.82	38.0	16.06	107.9	23.0	0.1	0	57.7	21.66
1861	34.0	13.21	32.1	11.84	5.5	2.36	92.2	40.85	9.2	4.43	36.5	15.21
1862	28.9	9.94	3.2	.79	11.9	4.70	4.0	1.99	22.8	8.98	15.2	5.52
1863	53.2	20.15	56.4	23.94	25.8	10.03	14.3	5.72	0	0	35.8	14.33
1864	45.4	17.31	25.5	8.80	28.5	11.56	0.1	0	0.1	.10	22.9	8.56
1865	23.8	10.15	12.0	4.59	51.1	27.39	5.5	2.86	0.5	.19	15.8	7.19
1866	62.2	29.48	24.3	8.25	20.2	11.50	0.1	.13	0	0	27.2	12.10
1867	17.9	7.58	13.4	5.73	0.7	.23	6.1	1.76	7.2	3.90	11.5	4.93

235. The remarkable fluctuations in the same groups in different years may be better illustrated by the annexed diagram, in which the ratios are conveniently shown.

236. There are several striking facts which are prominently illustrated by this diagram. There is the persistent high death-rate from cholera in the first group ranging from 7.58 in 1867 to 38.29 in 1860. On the other hand, there is the very variable death-rate in the Upper Provinces, ranging in the case of the Meerut group from an almost total absence of the disease in 1864 and 1866 to 107 admis.

Diagram illustrating the comparative Prevalence of and Mortality from Cholera in the Several groups of Jails in the Bengal Presidency; from 1859 to 1867.



sions per 1,000 in 1860, and 41 deaths per 1,000 in 1861, when there was so great a scarcity in Northern India. Again, and this is a very remarkable fact; the epidemics which spread over the North-West both in 1861 and 1867 were preceded by an unusual prevalence of cholera in the jails of the Lower Provinces during the years immediately previous, while in 1861 and 1867, when the disease was so rife in the Upper Provinces, the mortality among the prisoners in Bengal was in the former year considerably below the average, and in the latter the deaths from this cause were at a minimum. Still more remarkable and encouraging is it that, at a time when the pestilence was causing such havoc among the free population of Upper India, the prisoners, owing, we may hope in some measure at least, to the precautions which were adopted, and to the improved sanitary circumstances in which they were placed, suffered less than in any previous year of which there is any record.

237. The results in the jails of Upper India during 1867 are certainly very satisfactory. It may be an open question how far they are to be attributed to quarantine and how far to the great advances which have been made of late years in general sanitary arrangements. The value of the latter certainly is very great, but quarantine has also proved of signal service in preventing the access of other diseases, and it is of great practical importance that its influence in warding off cholera should be further tested.

Satisfactory results in the jails in 1867.

Cholera in the European and Native Armies in previous years.

238. Before proceeding to detail the measures of precaution which were adopted as regards the troops and the results of the great epidemic of 1867 among them, it will be instructive to consider the extent to which the disease has prevailed both in the European and Native Armies in previous years. The sickness and mortality among European troops in the Bengal Presidency between the years 1818 and 1846-47, have been arranged in quinquennial periods by Dr. Ewart.* From 1847-48 to 1853-54 the annual results have been tabulated by Dr. Hugh Macpherson.† For the other years the details are supplied by Dr. Bryden. The information derived from all these sources is embodied in the following table :—

Statement shewing the admissions and deaths from cholera among European Troops in the Bengal Presidency from 1818 to 1867.

Periods.	Strength.	Admissions.	Deaths.	RATIO PER 1,000	
				Admissions.	Deaths.
				For five years periods	
1818 to 1822 ...	47,017	1,018	272	21·6	5·7
1823 to 1827 ...	54,168	2,005	625	37·0	11·5
1828 to 1832 ...	62,800	2,495	544	39·7	8·6
1833 to 1837 ...	57,549	1,561	420	27·1	7·2
1838 to 1842 ...	68,238	2,406	855	35·2	12·5
1843 to 1846-47 ...	87,086	2,599	1,177	29·8	13·5

* Vital Statistics of the European and Native Armies in India.

† Analysis of the late Medical Returns of European Troops serving in the Bengal Presidency.

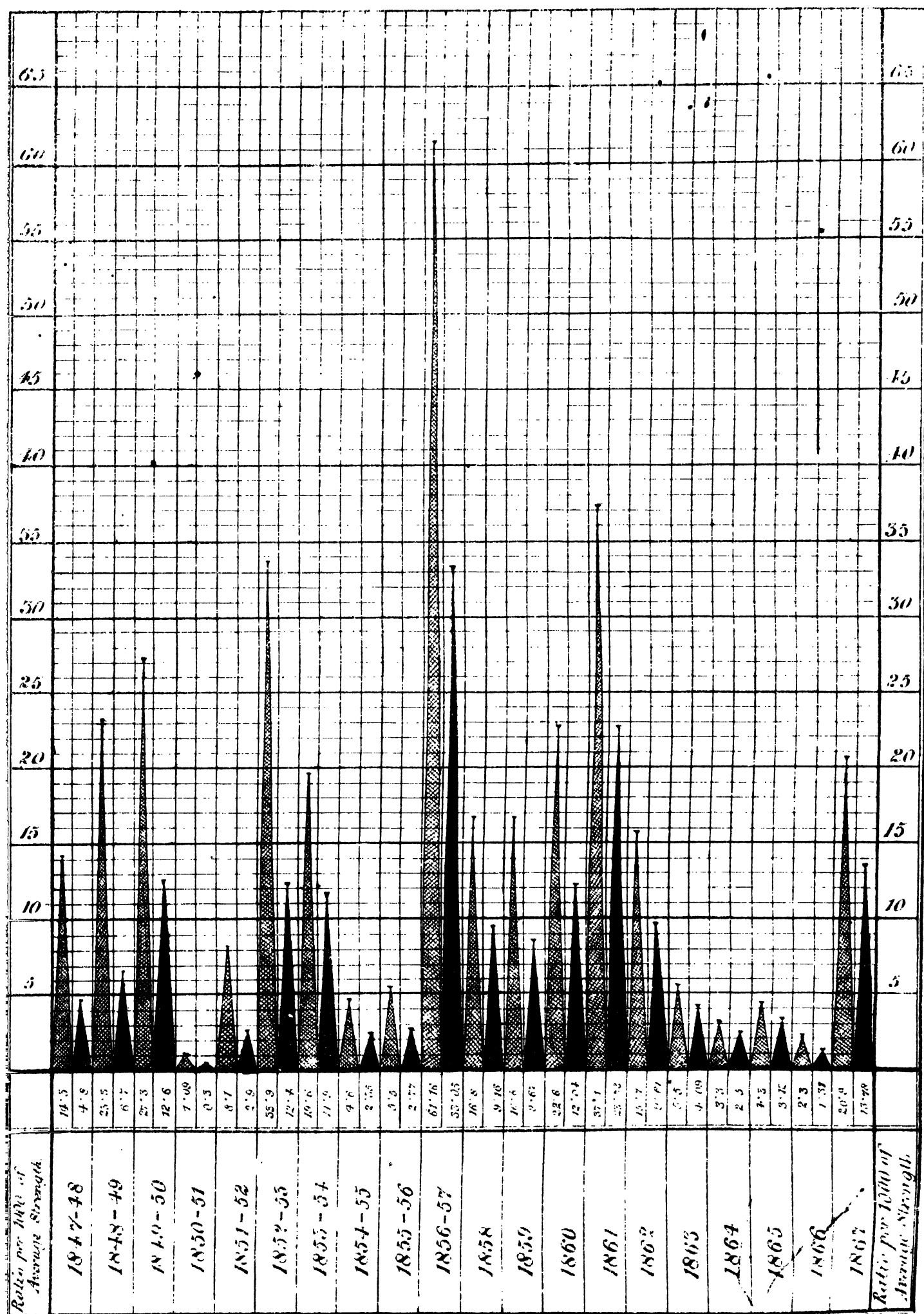
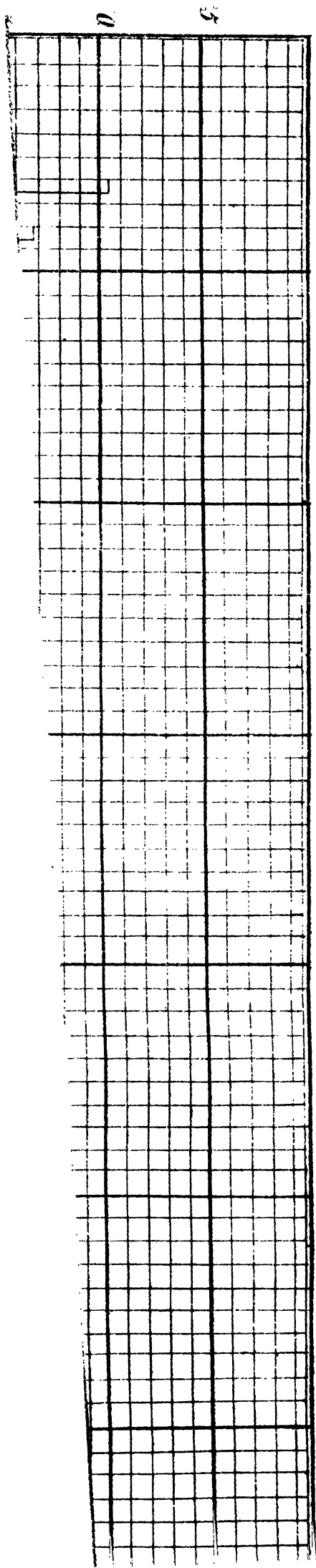


Diagram to illustrate the comparative ratios of Admission and Deaths from Cholera among British Troops in the Bengal Presidency during the twenty



* Native troops not shown separately for this group.

groups the disease fluctuates between almost total absence and an intensity unknown even within its endemic limits, the admission rate per 1,000 ranging from less than one to upwards of sixty. Another point worthy of notice is that in these severe epidemic visitations, the Native troops have, as a rule, suffered comparatively little, while in the first group the admissions and deaths from cholera have been almost invariably higher among them than among the Europeans. In the latter respect the comparison is open to the fallacy that the stations occupied by the two are not always the same, but as regards the immunity observed in Upper India this disturbing element exists to a very slight degree. It will be seen hereafter how remarkable this immunity has been even in cases when the epidemic has been most virulent among British soldiers at the same stations.

242. The special measures for the prevention of cholera among European troops in India, which were promulgated by His Excellency the Commander-in-Chief in G. O. of the 7th April 1862, were founded on the recommendations of the Cholera Commission of 1861. Slight modifications have since from time to time been instituted, but the general principles remain the same that the great safeguard against the spread of the disease is early removal from the infected locality, and that, in spite of any unfavorable condition of the weather, the move into camp must be made at the shortest notice on the appearance of the disease in an epidemic form. "To obviate the possibility of this most important measure being improperly delayed by any peculiar views regarding the epidemic character of the disease, it must be ordered that if within one week after the first case of cholera two or more other cases occur, it shall be considered that the disease has assumed an epidemic form, and the men must be removed accordingly." This quotation is taken from the 479th para. of the 3rd Section of the Cholera Commission Report, which was somewhat modified by the Sanitary Commission for Bengal and circulated for general guidance under the orders of the Government. The rules were in force when the outbreak of 1867 took place, and it will now be necessary to examine the results which attended their being carried out.

243. Particulars of what occurred in each station which was visited by the epidemic have been in a great measure anticipated in a previous section of this Report; but it will be necessary to examine them now with special reference to going into camp, and to the actual sickness and mortality which occurred; to compare the results of the epidemic of 1867 with those of 1861; to ascertain, as far as possible, to what extent these results have been affected by the different procedure adopted in the two years; how far the spread of cholera was prevented, and how far the prevalence of any other diseases may have been favored by the exposure of Europeans, men, women and children, under canvas in the hottest season of a tropical climate.

244. It would be tedious to criticise the particular movements which were made by each separate body of men who went into camp in consequence of the appearance of cholera. Much, doubtless, depends on the manner in which arrangements

of this nature are actually carried out ; but it will, as a general rule, be assumed that the moving into camp was conducted exactly according to the instructions of the Cholera Commission, and in such a manner as was calculated to secure the most favorable results. In recording the sickness and mortality which attended the epidemic among the troops, it will be convenient for the purposes of comparison to consider the stations in four groups ;—1st, those attacked in 1867 which were also attacked in 1861 ;—2ndly, those attacked in 1867 which were not attacked in 1861 ;—3rdly, those which escaped in 1867 but which suffered in 1861 ; and, 4thly, those which escaped in both epidemics.

245. The stations which suffered in both the great epidemics of 1861 and 1867 were seventeen in number. The following statement exhibits what occurred among the European garrisons in each epidemic, women and children not included :—
Comparative Statement shewing the results in those Stations which were attacked in the great epidemics of 1861 and 1867.

STATIONS.	1861.						1867.				
	Average Strength.	Number of admissions from Cholera.	Number of deaths from Cholera.	RATIO PER 1,000.			Average Strength.	Number of admissions from Cholera.	Number of deaths from Cholera.	RATIO PER 1,000.	
				Cases.	Deaths.					Cases.	Deaths.
Fyzabad	1,114	5	1	...	...		887	3	2	...	...
Lucknow	2,215	9	3	...	...		2,535	11	6	...	...
Allahabad	1,277	32	21	...	...		958	28	18	...	...
Cawnpore	1,230	48	35	...	...		691	3	2	...	...
Bareilly	1,188	4	5	...	...		805	3	2	...	...
Moradabad	459	2	2	...	...		299	7	5	...	...
Meerut	2,535	118	87	...	...		1,579	123	111	...	...
Delhi	1,127	84	50	...	...		351	1	1	...	...
Muttra	347	19	4	...	...		412	1	1	...	...
Morar	1,106	210	152	...	...		868	15	10	...	...
Gwalior Fort ..	244	8	7	...	...		219	8	4	...	...
Umballa	1,820	71	53	...	...		1,329	29	21	...	...
Jullundur	1,015	1	...	...	...		788	12	9	...	...
Ferozepore	889	4	1	...	...		773	16	8	...	...
Mean Meer	1,700	725	450	...	...		1,030	86	52	...	...
Lahore Fort	149	46	29	...	...		140	4	2	...	...
Govindghur	481	50	41	...	...		138	1	1	...	...
TOTAL ...	18,896	1,436	941	75.9	49.7		13,802	351	255	25.5	18.4

246. The results of 1867, in these stations, have generally been very much more favorable than those of 1861. In none of them, excepting in Meerut, did the rate either of admissions or deaths during the past year reach the fearfully high figures to which they attained in the former outbreak. The fearful mortality which occurred at Mean Meer and Morar in 1861 found

Generally favorable results of 1867 in these stations.

no parallel at those stations in 1867. In 1861 the ratio of admissions from cholera at these seventeen stations was 75·9 per 1,000, and of deaths 45·7. In 1867 the ratios were 25·5 and 18·4. These results are very favorable. Had the death-rate from cholera in these stations been at the same ratio in 1867 as it had been in 1861, the loss of life, instead of having been only 255, would have amounted to a total of 687, or more than double of what actually occurred. Looking only at results, there has, in other words, been a saving of 432 lives.

247. The results in Meerut were certainly unfavorable. The disease here was very severe, but its extreme severity was confined to the 1-3d Buffs. The particulars of admissions and deaths in the different corps composing the garrison at this station are shown in the following statement:—

CORPS.			ADMITTED.		DISCHARGED.		DIED.	
			Cholera.	Choleraic Diarrhœa.	Cholera.	Choleraic Diarrhœa.	Cholera.	Choleraic Diarrhœa.
R. A.—	Men	...	4	1	...	...	4	1
"	Children	...	5	...	...	...	5	...
19th Hussars—	Men	...	1	...	...	...	1	...
"	Women	...	1	...	...	...	1	...
3rd Buffs—	Officers	...	1	...	...	...	1	...
"	Men	...	106	11	4	8	102	3
"	Women	...	14	3	2	3	12	...
"	Children	...	25	2	5	2	20	...
TOTAL ...			157	17	11	13	146	4

248. The sanitary and prophylactic measures which were adopted at Meerut are thus detailed by the Deputy Inspector General of Hospitals, Dr. Huntly Gordon—"As soon as possible after the epidemic declared itself, 800 men were removed from the infected range of barracks; the bungalows were fumigated with nitrous acid, thoroughly cleansed and whitewashed; the latrines and drains were purified; disinfectants in the form of McDougall's Powder freely used; the men were warned of the danger of neglecting any slight diarrhœa, and invited to apply at once for medicine, which was always kept in readiness,—this they did in large numbers; medical inspections were held twice a day, and tents were pitched near the hospital, where all sickly-looking men were kept under observation. All who were observed going frequently to the latrines were at once taken to hospital; non-commissioned officers and camp-police were told off to watch; boxes of astringent pills were given to non-commissioned officers for issue; any one applying more than once to be taken to hospital. Particular pains were taken to ensure the men wearing their flannel belts; the camp-police were ordered to prevent the introduction of any vegetables or fruits into the camp by Natives. The issue of beer was stopped for a time, as it became thick and shaken up by frequent moves; subsequently the supply was carefully strained into fresh casks, and sent out to the camp daily by the Commissariat. An early cup of tea or coffee was given. In moving into or changing encampments, every thing was done both as regarded a liberal

allowance of transport, and the short distances marched, to reduce fatigue to a minimum; extra charcoal was issued, so that the drinking water should be boiled; and in a doubtful case as regarded the well water, a daily supply for drinking purposes was sent out by the Commissariat. Filters were used in camp; cots were used, eight for an ordinary, four for a hospital tent; extra tents were set apart for the use of cholera patients. Disinfectants were freely used, especially in connection with the excreta of the sick, which were promptly removed and buried in a trench. The latrines were carefully attended to. The clothes and bedding of infected persons burned." "Perhaps, it may be said or thought," writes Dr. Beatson in his general report on the Epidemic, "that the arrangements for the camping out of the Buffs were not as judicious as they might have been. There can be no more unfounded supposition. I have had the fullest evidence to the contrary, both from previous correspondence as well as more lately from personal communication with the Military and Medical authorities at Meerut. I feel bound to put on record that I believe no regiment could have been more earnestly watched and more judiciously handled during its severe trial."

249. And yet, in spite of all the precautions taken, the results were most unfortunate, the loss of life most lamentable. The disease was as virulent in the other arms of the service at Meerut as in the Infantry. Every case which occurred in the Artillery and Hussars proved fatal, and yet it did not spread among them to any extent. In the Artillery there were only nine cases and in the Hussars two; in the Infantry 146. Why it clung so persistently to the Buffs and caused such terrible sickness and mortality is a mystery which in the present state of our knowledge cannot be solved.

250. The next group of stations embraces those which were attacked in the epidemic of the past year but escaped in 1861. The particulars regarding them are thus detailed:—

Statement shewing the Stations attacked in 1867 which escaped in 1861.

STATIONS.	1867.						1861.					
	Strength.	Number of cases of Cholera.	Number of deaths from Cholera.	RATIO PER 1,000.			Strength.	Number of cases of Cholera.	Number of deaths from Cholera.	RATIO PER 1,000.		
				Cases.	Deaths.					Cases.	Deaths.	
MURREE DEPOT AND FAMILY CAMP	346	7	3	...	...		229	...	...	...	...
NOWSHERA	730	5	2	...	...		805	...	...	...	...
PESHAWUR	1,754	274	163	...	...		1,955	2*	...	...	...
SHAJEHANPORE	472	24	19	...	...		525	...	...	...	...
SEETAPORE	574	8	6	...	...		628	...	...	...	...
SUBATHOO	751	40	19	...	...		1,019	...	...	...	...
KUSSOWLIE	327	1	1	...	...		223	...	...	...	...
TOTAL	4,954	359	213	72.4	42.9		5,384	...	...	...	...

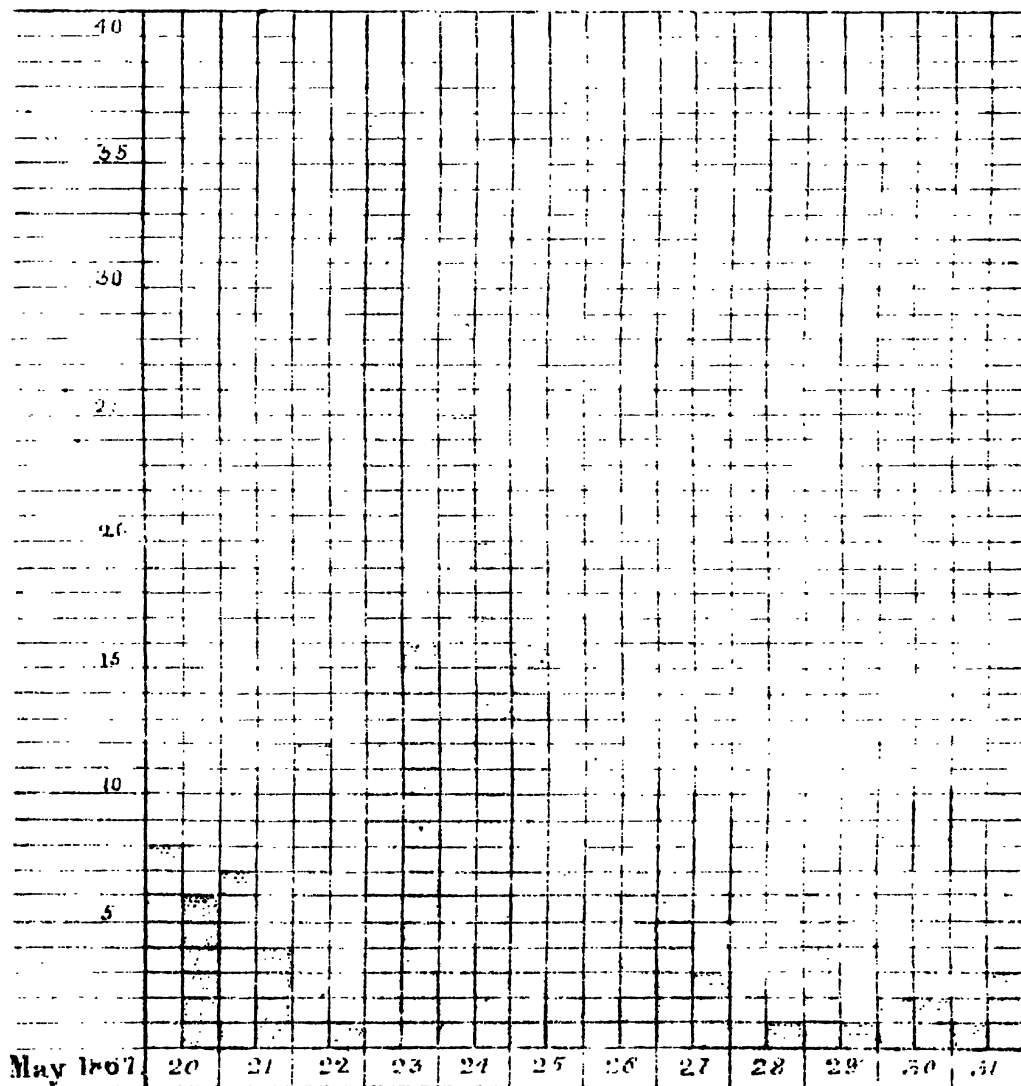
the

The 12. Two cases are entered as having occurred at Peshawur in 1861, one in June and one in September; neither was fatal. Peshawur was the area of the epidemic of that year.

251. But although none of these stations suffered in 1861, ~~excepting~~ two cases at Peshawur referred to in the footnote, both Nowshera and Peshawur were attacked by epidemic cholera in 1862, and the loss of life from the disease in the last station was severe. Out of a strength of 1,970 European soldiers 168 were admitted and 97 died. The disease appeared in the months of July, August, September, October and November. It was most severe in the 93rd Highlanders. An excellent account of the epidemic is to be found in the Army Medical Department Reports for that year by Dr. Munro, the Surgeon of the Regiment.

252. In the epidemic of 1867, the Highland Regiment, which formed part of the garrison, again suffered most. Out of a strength of 765, including men, women and children, 129 were attacked and 72 died within the short space of twelve days. The daily admissions and deaths from the disease are shown in the following diagram :—

DIAGRAM
TO ILLUSTRATE THE DAILY ADMISSIONS AND DEATHS IN
H. M. 42^d HIGHLANDERS AT PESHAWUR.



The outbreak was very sharp, but compared with what occurred in different regiments in 1861, it was of short continuance. In Her Majesty's 51st Regiment for example, which suffered so severely at Meean Meer in that year, the epidemic lasted from the 5th of August to the 16th of September, or a period of 42 days. In Her Majesty's 94th Regiment at the same station it continued from the 13th August to the 14th of September, or a period of 33 days.

253. The Return B. appended to Dr. Beatson's Report shows that the 42nd moved into camp in three detachments,—five companies on the 21st and the remaining portions of the Regiment on the 23rd and 24th. It is of the greatest importance to know how many of the cases were admitted from each of these bodies and how many cases had occurred in each before it left cantonments. But these details are not now procurable, as the Regiment has left India.

254. In the 77th Regiment the first man was seized on the 21st of May about 11 A. M., and the last on the 24th June. The 77th Regiment and Royal Artillery. The disease thus clung to the Regiment for more than a month, but the sickness and mortality were little more than one-half what they were during the short but sharp attack from which the 42nd Highlanders suffered. In the Artillery the disease was very severe. In one of the Batteries (E—19 R. A.) the deaths to strength were in the ratio of 12·19 per cent; all the four Batteries suffered more or less severely.

255. The following statement, prepared by the Deputy Inspector General of Hospitals, shows the admissions and deaths in each Regiment and Battery at Peshawur during the epidemic:—

Statement showing the admissions and deaths from cholera in each Regiment and Battery of European Soldiers at Peshawur in 1867.

REGIMENT AND BATTERY.	STRENGTH* AT THE COMMENCEMENT.				ADMISSIONS.				DEATHS.				RATIO PER CENT.	
	Men.	Officers.	Women.	Children.	Men.	Officers.	Women.	Children.	Men.	Officers.	Women.	Children.	Deaths to Strength.	Deaths to Admissions.
E. Bat., F. Brig., R. H. A. ...	132	5	13	19	26	...	...	1	14	...	...	1	10·60	53·84
F. „ F. „ R. H. A. ...	127	3	16	22	16	...	...	...	11	...	...	...	8·66	68·75
E. „ 19th „ R. A. ...	123	4	13	16	29	...	...	...	15	...	...	...	12·19	51·72
4 „ 22nd „ R. A. ...	58	3	7	13	6	...	1	...	5	...	1	...	8·62	83·33
42nd Highlanders ...	674	21	27	43	124	2	3	5	68	1	1	4	10·08	54·83
77th Regiment ...	857	28	23	33	74	1	1	2	50	1	1	2	5·83	67·58
TOTAL ...	1,971	64	99	146	275	3	5	8	163	2	3	7	8·26	60·13

* This strength differs from that given in the Tables at paras. 250 and 281. In the first of these the strength taken is the average strength for the year, and that is the basis of calculating ratios of admissions and deaths where comparisons between the results of 1861 and 1867 are made as it is the basis taken in Dr. Bryden's Tables. In the second the strength is the strength of the month of May. In the above Table it will be observed that the strength taken by the Deputy Inspector General of Hospitals is that of the commencement of the epidemic. Any apparent discrepancies as regards the statistics of other stations are similarly accounted for.

256. No direct connection can be traced between this severe outbreak at Peshawur and the return of the pilgrims. The great body of them appears to have reached on the 28th April. On the 11th of May, as has been already stated, there was one solitary case in the city, and none others were reported there till the 22nd and 23rd, when the disease became general. On the 2nd of June 80 persons are said to have died, and this was the highest mortality reached on any one day. It is stated, however, that on the 19th May, the day prior to that on which cholera broke out in the European garrison, the pilgrims for Jellalabad passed through the district on their return to their homes. The facts connected with the first appearance of cholera in the city of Peshawur, and the discrepancy in the statements connected with its history, have already been discussed.

257. The European troops in five stations which were attacked by cholera in 1861 altogether escaped the disease in 1867. Agra was the scene of one of the severest outbreaks in 1861. Out of 1,153 men 109 were seized and 67 died; among 80 women there were 7 cases and 2 deaths, and among 107 children, 5 cases and 4 deaths. During 1867, out of a strength of 967 soldiers, not a single man suffered from the disease. The immunity of the European garrison at Agra, surrounded as it was by cholera on all sides, is very remarkable.

Statement shewing the Stations attacked in 1861 which escaped in 1867.

STATIONS.	1861.						1867.					
	Strength.	Cases of Cholera.	Deaths.	Ratio per 1,000.			Strength.	Cases of Cholera.	Deaths.	Ratio per 1,000.		
				Cases.	Deaths.					Cases.	Deaths.	
Futtehghur	434	11	5	...	...		268	...	...	...	..
Nagode	203	1	0	...	...		203	..	...	...	...
Roorkee	588	1	1	...	...		360	...	...	...	...
Agra	1,220	114	69	...	...		967	...	...	...	...
Sealkote	1,494	1	...	...	...		1,262	...	...	...	...
TOTAL	3,939	128	75	32·4	19·0		3,060	...	...	...	...

Nagode, Roorkee and Sealkote hardly suffered even in 1861, nor was cholera very prevalent among the European garrison of Futtehghur in that year.

258. The only stations within the epidemic areas in which the European soldiers entirely escaped cholera both in 1861 and 1867 were Roy Bareilly, Nynee Tal, Landour, Stations which escaped in both epidemics. Phillour, Dugshaie, Mooltan, Dera-Ismael-Khan, Kangra, Rawul Pindee, Campbellpore, Attock, and Sealkote. It is to be observed, however, that in several of them a few cases occurred among the women and children, as will afterwards be shown.

259. Before proceeding to consider other particulars, it will be advisable to trace the extent of the disease among European soldiers quartered in those cantonments which do not lie within the area covered by the epidemic of 1867, and to compare the facts with those of the same localities in 1861. The following comparative statement has been prepared from Dr. Bryden's Tables :—

Statement shewing the results of 1861 and 1867 in those Stations which were not within the epidemic area of either.

STATIONS.	1861.					1867.				
	Strength.	Number of cases of Cholera.	Number of deaths from Cholera.	Ratio per cent. of strength.		Strength.	Number of cases of Cholera.	Number of deaths from Cholera.	Ratio per cent. of strength.	
				Cases.	Deaths.				Cases.	Deaths.
Fort William ...	1,056	18	9	.....	.....	7 39	3	2	.....	.....
Dum-Dum ...	803	11	4	.....	.....	472	1	1	.....	.....
• Barrackpore ...	1,141	13	6	.....	.....	357	1	1	.....	.....
Chinsurah Depôt ...	204	2	2	.....	.....	Not given	4	2	.....	.....
Hazareebaugh ...	846	3	0	.....	.....	876	1	1	.....	.....
Dinapore ...	783	3	2	.....	.....	907	1	1	.....	.....
Benares and Rajghaut ...	897	4	4	.....	.....	595	none	.....	.....	.....
Jhansio ...	623	.....	.....	.....	.....	608	„	.....	.....	.....
Nowgong ...	240	.....	.....	.....	.....	193	„	.....	.....	.....
Saugor ...	860	.....	.....	.....	.....	657	„	.....	.....	.....
Jubbulpore ...	861	1	.....	.....	.....	634	„	.....	.....	.....

It will be observed that there was a greater proportion of cholera among the European troops in these stations in 1861 than there was in 1867, though even in the former the disease cannot be said to have been prevalent.

260. The comparison between the extent and fatality of cholera among Native troops at the same stations in 1861 and 1867 cannot be made in full, as the results have not been particularized in Dr. Bryden's Tables for the earlier year. Some information can, however, be supplied from the Report of the Cholera Commission of 1861 and that has been embodied in the following general

table in which the statistics of the disease in 1867 as given by Dr. Bryden have also been entered :—

Statement shewing the results among Native Troops in 1861 and 1867.

STATIONS.	1861.					1867.				
	Strength.	Number of cases of Cholera.	Number of deaths from Cholera.	Ratio per 1,000		Strength.	Number of cases of Cholera.	Number of deaths from Cholera.	Ratio per 1,000	
				Cases.	Deaths.				Cases.	Deaths.
Meean Meer ...	665	41	20	.....	.. ...	1,324	13	5		
Umritsur ...	213	13	11	...	.....	144	1	1		
Umballa ...	720	4	2	.....	.....	937	6	3		
Delhi ...	1,175	28	9	.....	.....	618	1	1		
Meerut ...	623	4	2	.....	.....	888	.....	.....
Agra ...	662	15	5	.....	.....	703	1	.....	
Morar ...	1,372	.....	.....	.....	.. ...	1,694	3	2		
TOTAL ...	5,430	105	48	19.3	8.8	6,308	25	12	3.9	1.9

From this table it will be seen that, excepting Morar, the Native troops at all the stations suffered very much more in 1861 than they suffered in 1867. As a whole, the admissions were 19.3 per 1,000 in 1861 and the deaths 8.8. In 1867 the ratios were only 3.9. and 1.9.

261. In common with the European soldiers the Native troops were attacked in several of the stations of the Upper Punjab in which they had not suffered in 1861. Indeed the epidemic among them was more severe here than anywhere else. The details will be found in the general table given in the Appendix, but it may be mentioned that at Peshawur there were 63 cases and 27 deaths, and in the frontier stations 86 cases, of which 39 proved fatal.

262. There is a slight discrepancy between the figures given in Dr. Bryden's General results of the epidemic among British soldiers. Tables and those which are appended to Inspector General Beatson's report. According to the former there were altogether 722 cases of cholera among the European troops in the Bengal Presidency in 1867, of which 479 proved fatal, or a ratio of 20.9 of admissions and 13.84 of deaths per 1,000 of average strength. In 1861 the cases were 1,663 and the deaths 1,065, the ratios to strength being 37.1 and 23.7 per 1,000.

263. According to Dr. Beatson's return the total sickness and mortality among officers, men, women, and children belonging to the European army of the Bengal Presidency during 1867, were as follows :—

	Admissions.		Deaths.	
Officers	13	..	9
Men	719	..	469
Women	87	..	56
Children	104	..	83
Total	...	923	...	617

The strength of these different classes is not separately shown in his tables, and the comparative prevalence and fatality of the disease amongst them cannot therefore be deduced from them.

264. Such have been the results in the army during 1867 as compared with those of 1861. It has been shown that confining the histories of the two years to those stations which were attacked in both, the comparison tells largely in favor of the former. It is important to learn how far these results can with justice be attributed to the moving into camp. At the outset it must be admitted that the question is one of very great difficulty. Instances have occurred in all epidemics of cholera in which the troops attacked by the disease never left their barracks and yet did not suffer, and it may fairly be argued that no decided conclusion can be drawn as to what would have occurred if those regiments which went into camp had never left cantonments. On the other hand, there is the strong fact that the epidemic affected the general population of the country to an extent certainly as great, if not greater, than that of 1861, and that such a violent and wide-spread diffusion of the disease was to all appearance fraught with as much danger to the European troops as had ever previously been known.

265. It will, however, be necessary to examine this important question more in detail, and to learn the opinion of the medical officers as regards the results of the movements which were made on the outbreak of the disease. In the return B which accompanies the special report on the cholera of 1867 by the late Inspector General, Her Majesty's British Troops, a statement is given with a view to show the effect of moving into camp, but it is difficult to learn from it with any clearness what actually took place. In the following cases it would appear that the disease altogether disappeared on removal into camp, no further case having occurred :—

Statement shewing those cases in which Cholera entirely disappeared on moving into Camp.

No.	Stations.	Regiment, Battery, or Detachment.
1	Meean Meer ...	B. A, R. H. A.
2	Ditto ...	F. 19, R. A.
3	Subathoo ...	Detachment of 90th Regiment which moved to Solon.
4	Meerut ...	4 Batteries of Artillery moved and 2 cases only occurred. It is
5	Ditto ...	not shown in which of them they appeared, but two at least must have escaped altogether.
6	Seetapore ...	Married families and one Company.
7	Barcilly ...	37th Regiment.
8	Morar ...	R. H. A.
9	Ditto ...	E. 11th R. A.
10	Gwalior ...	Detachment 103rd Regiment.
11	Ditto Fort ...	Married families.
12	Allahabad Ditto	R. A.

The

In twelve instances regarding which there is no doubt the disease disappeared coincident with the movement in camp.

266. Leaving the infected locality may not always be attended with immediate benefit and yet may be productive of good. The period of the incubation of cholera has not yet been ascertained, but assuming that the disease may remain latent for three days, it will be fair to attribute any cases, which occur within that period after removal, to the locality from which the detachment came, and those cases in which no fresh seizures occurred after the lapse of that time may fairly be considered as favorable. Under this head the following movements may be classed :—

Statement showing the cases in which no fresh seizures occurred after the third day in Camp.

No.	Stations.	Regiment, Battery, or Detachment.
1	Subathoo ...	Detachment which marched to Barraloghee had only two cases.
2	Peshawur ...	Hospitals 77th Regiment, two cases, one on second and one on third day.
3	Meean Meer ...	Detachment 106th Regiment to Unmursiddoo, one case on first day.
4	Ditto ...	Detachment ditto, to Hullokee, two cases on second day.
5	Moradabad ...	Families 36th Regiment, two cases, one on first and one on second day.
6	Morar ...	103rd Regiment only one case of choleraic diarrhoea.
7	Ferozepore ...	Detachment 1-5th Regiment.
8	Ditto ...	Ditto.

In 20 cases, therefore, the results of moving into camp were decidedly favorable.

267. In spite of removal into camp the Royal Artillery, 42nd and 77th Regiments which suffered severely in spite of moving. Regiments at Peshawur, the 106th at Meean Meer, the 1-3d at Meerut, the 107th Regiment at Allahabad, and the 36th at Shajchanpore, all suffered more or less severely. Excepting these corps, however, the disease was generally slight. Instances have been given in which the epidemic ceased with going into camp. On the other hand there were several cases during the late outbreak in which no movement was considered necessary and in which nevertheless the disease did not spread. Doctor Beatson's table shows that this occurred in the Artillery and Hussars at Umballah, in the Artillery, Lancers and two Infantry Regiments at Lucknow, and in the 1-11th at Fyzabad.

268. Although the evidence is thus conflicting and perplexing in its details, the only conclusion which can be legitimately drawn from the results of 1861 and 1867, is in favor of an early removal from the infected quarter.

General conclusion as regards moving.

as the best preventive measure yet known for arresting the spread of the disease. Although in some cases the epidemic was not checked, and the losses sustained were very heavy, the ratios of admissions and deaths in the latter year when the disease was much more widely spread, compare very favorably with those of 1861. In 1861 the admissions from cholera were 37.1 and the deaths 23.73 per 1,000. In 1867 the admissions were 20.9 and the deaths 13.84. If the comparison be confined to the stations attacked in both years, and this is the fairest mode of comparison, the results are much more striking. The only marked difference in the management of the two epidemics consists in the fact, that in the one case moving into camp on the appearance of cholera was the exception, and in the other the rule.

269. But it has been argued that even if moving into camp be the best means of checking the progress of cholera among European troops, the number of deaths from sun-stroke, fever, and other diseases, which is thereby occasioned, more than counterbalances any good that may be derived. In this manner during 1867 the 103rd Regiment at Morar and 1-5th at Ferozepore lost several men from sun-stroke, and the prevalence of fever in the 77th Regiment at Peshawur was believed to be due to previous exposure under canvas. It is remarkable that in not a few cases the general health of the men has really benefited by the change. In 1865 for example, in the month of August, when the troops at Saugor moved into camp on account of cholera, Brigadier General Travers brought to notice "the much improved general health of the men (of the 97th) since they have been under canvas." He also stated that "the general health of the Royal Artillery had much improved in camp." In August 1863 when one wing of the 23rd Regiment moved into camp from Agra, Dr. John Murray reports that there were only 66 per cent. of sickness in it during the following five months, whilst there was 101 per cent. in the other half of the regiment which had remained in cantonments.

270. The effects of moving into camp can only be fairly judged by comparing the subsequent sickness among regiments which went under canvass, with the results in those which never left the station. In those few cases, in which part of a corps moved, while the other part remained in barracks, the comparison can be made with even greater accuracy. The whole of the statistics on this important question have been very carefully analyzed by Dr. John Murray, Inspector General of Hospitals, and the following particulars are extracted from his valuable report.

271. At Umballa, Lahore and Meerut a portion of the European garrison went into camp and a portion remained in cantonments. The subsequent sickness among the two is shown in the annexed table.

Results in which portion
only of the garrison moved.

The

Statement shewing the subsequent admissions in the Garrisons of Umballa, Lahore, and Meerut, part of which remained in Cantonments and part removed into Camp.

STATIONS.	Corps.	SUBSEQUENT ADMISSIONS PER 1,000 IN THE PORTION		Months on which the admissions are taken.
		Which remained in Cantonments.	Which went into Camp.	
Umballa ...	{ R. A. & 21st Hussars. }	454	...	September and October.
Ditto ...	94th ...	...	276	Ditto.
Lahore ...	{ Garrison of the Fort. }	698	..	Ditto.
Mecan Meer ...	R. A. ...	...	375	Ditto.
Ditto ...	106th Regt.	...	936	Ditto.
Meerut ...	19th Hussars	427	...	Sept., October & November.
Ditto ...	R. A. ...	...	356	Ditto.
Ditto ...	1—3d Regt.	...	547	Ditto.

At Umballa the results are decidedly in favor of the Regiment which went into camp. At Mecan Meer the subsequent sickness among the Artillery was very slight. In the 106th it was heavy; the admissions were in a higher proportion than they were during the same months, September and October, in the garrison of the fort which never moved out. The result is all the more unfavorable, because the statistics of former years show that the admissions among the garrison of the fort have always been higher than those among the troops in the cantonment of Mecan Meer. Still, if any very serious increase of sickness had been due to the mere moving into camp, it is natural to expect that the Artillery would have suffered. At Meerut the Artillery which went into camp had less sickness than the Hussars, which did not move. Among the Buffs the results were not so favorable. In three out of the five instances given in the table, the subsequent sickness among those who went into camp was less than among those who remained under shelter of their quarters.

272. The results at Peshawur at first sight appear to be very unfavorable.

Results at Peshawur.

The Royal Artillery and 77th Regiment had both been in cholera camps. Between the 1st June and 1st November, the Artillery out of a strength of 314 had 563 admissions, and the 77th out of 520 had 1,025. It is to be observed, however, that the 42nd, which had also been in camp in May, but which moved to a neighbouring hill called Cherat, instead of returning to Peshawur, did not suffer. Out of 566 only 258 were admitted into hospital, and the men suffered very slightly from the fever which was so prevalent in the other Regiments. It is but fair, therefore, to ascribe the sickness not to camp, but to influences which were afterwards at work, and the climate of Peshawur in the end of the rains is quite sufficient to account for what occurred. This view of the case is moreover borne out by the fact that at this season, as has so frequently happened at Peshawur in other years, the Native Troops suffered severely from fever, and they had not as a body been exposed in camp. Indeed, it is remarkable that the detachments of Native Coys which had been on duty at the

cholera camps suffered less than the men who had never left cantonments. Excepting the 77th and Artillery at Peshawur, the 106th at Meean Meer, and the 1-3d at Meerut, no Corps which moved into camp on account of cholera appears to have afterwards suffered from unusual sickness, and excepting the cases of sunstroke which occurred in the 1-5th and the 103rd Regiments, evidence is wanting to show that the sickness which subsequently occurred was due in any great degree to exposure under canvas.

273. At eight stations Native troops were moved into camp on the appearance of cholera, *viz.*, at Deolee, Kohat, Bunnoo, Ferozepore, Attock, Shajehanpore, Allahabad, and Moradabad. At the first of these places the benefit derived was very decided. Good results of moving Native troops into Camp. "The move of the troops and followers into camp," remarks Dr. Crawford, "had thus at once a most marked and beneficial effect in cutting short the epidemic, and on referring to the tables of the comparative sickness from fevers, &c. for July and August 1866 and 1867, it will be seen that as far at least as the 2nd Bengal Cavalry was concerned, it was in no way injurious, nor was there any increase in the average number of admissions from fever and bowel complaints in consequence, as might have been anticipated from a move into camp at such a season of the year." Again, he says: "It will be seen that there were three distinct waves of the epidemic, that each of these invaded a fresh section of the inhabitants, and that the third which invaded us on the 20th July was cut short by the move of the troops into camp on the 22nd." Of the movement at Umballah Dr. Homan states that it was made "apparently with great benefit." Particulars of the other movements have not been given in the Annual Regimental Reports, but the favorable results in every case are in themselves the best evidence that the procedure was attended with success.

274. In the following jails also during 1867 prisoners were removed into camp in order to check the spread of cholera: Good results in checking the disease among prisoners. Dhurmsala, Sectapore, Allahabad, Shajehanpore, Goojranwallah, Rawul Pindee, and the Lahore Female Penitentiary. As a whole, the results were very satisfactory. In none of the jails did the disease spread with any great virulence except at Sectapore. Full details of the outbreak here and of the influence of the movement into camp are wanting. The remark of the Civil Surgeon, Dr. Ellis, with reference to quarantine, may be here quoted. "The only disease," he states, "that occurred during the year in which the beneficial effects of quarantine might have been expected to appear was cholera, but in that disease the quarantine of new arrivals seemed to exercise no influence."

275. The benefit of leaving a locality infected by cholera is strikingly illustrated in the following narrative which has been supplied by Dr. Harris, the Civil Surgeon at Shajehanpore:—"In an orphanage the disease appeared

271. Benefit of moving illustrated at Shajehanpore. certain huts detached from the other buildings. As soon as possible all the Results in only of the gail boys were removed into tents, leaving only the diseased boys in the quarter, but a storm coming on a day or two after, the healthy boys

were removed back into the infected yard, in which one or two immediately fell victims to the disease; the remaining healthy ones were then again immediately removed into tents, upon which the disease a second time at once disappeared."

276. The opinions of the medical officers as to the effect of moving naturally vary with the result of their experiences during the late epidemic. Dr. Summers, the Deputy Inspector General of Hospitals at Peshawur, writes, that "the result of encamping out of troops at this station affected with epidemic cholera has been unusually disappointing." Dr. Jephson, the Deputy Inspector General at Lahore, expresses his opinion that "the expediency of a move from cantonments immediately on the appearance of cholera in the cold or hot weather, if the men have local temporary barracks, similar to the ones round the station of Meean Meer, to get to, cannot, I think, be questioned, but in such a fearfully hot and trying climate as that of this division in May, June, July, or August, I think moving about in tents would in many cases be attended with a greater amount of mortality from sunstroke or other diseases than keeping men in barracks and pitching tents close to the barracks for the men to sleep in, and so preventing overcrowding and admit of a barrack being fumigated and limewashed if necessary. The 1-5th Fusiliers lost the same number of men from sunstroke as they did from cholera, and in the 106th 12 men died of sunstroke, and only 47 of cholera, although the corps was a very short time under canvas." Dr. Munro, Deputy Inspector General of Hospitals at Umballah, considers that the movement of troops into camp in his division was attended with good results. Speaking of the after-experience of the 94th Regiment, he says: "This Regiment has been remarkably healthy while in camp; it did not suffer in the least from exposure to solar influence, though the Thermometer stood at 112° in the tents." Dr. Menzies, the Superintending Surgeon Major, Gwalior Circle, states that the march of the 103rd Regiment "had the effect of completely arresting the disease." Dr. Innes, Deputy Inspector General of Hospitals, Lucknow, remarks that "the results of moving into camp throughout his circle were, as a rule, most satisfactory. The only instance of an opposite character is found in the history of the detachment of Her Majesty's 36th Regiment at Shajehanpore, to which for a number of successive marches the disease clung with a tenacity altogether unaccountable."

277. The difference in the results of moving two separate detachments of Her Majesty's 36th Regiment at Shajchanpore has already been noticed. Dr. Ball's opinion on the value of early removal is thus recorded: "One fact, however, stands prominently forward in the above melancholy history. The head quarters were comparatively exempt from the disease, and the mortality correspondingly trivial. In the detachment the disease was virulent and the mortality excessive. The two bodies of men had been exposed to precisely the same influences, in the same locality, in the same sanitary conditions, and under circumstances not only similar and analogous, but nearly absolutely identical. I fail to discover any local causes in the encampments selected or in

Evidence at Shajehanpore
in favor of early removal.

the general hygienic arrangements to account for so remarkable a difference, nor *a priori* is it probable that *foci* of disease should have been repeatedly pitched upon, notwithstanding every care and anxiety in one case and avoided in the other. But there was one important difference in the conditions to which these parties were subjected; one marched out of the infected locality on the appearance of the disease, the other from unavoidable causes was detained in it nearly a week." A portion of this statement has already been quoted in the second section of this Report, but the evidence has a very important bearing on the question of moving into camp, and the passage has therefore been here extracted in full.

278. It has already been shown that the epidemic of 1867 was much more wide-spread than that of 1861; that it extended from Allahabad to Peshawur and along the frontier, while the disease in the previous year with a south-eastern limit somewhat similarly defined had not travelled beyond Lahore. It has been further shown that in spite of having covered so much larger an area the epidemic of 1867 proved much less fatal among European troops, than that of the former year. There is another point of marked difference between the two outbreaks, and that is, that the visitation of last year commenced in many places much earlier in the season. Taking the stations which were attacked in both years, the results are as follow:—

Comparative Statement shewing the season of the year during which the epidemics of 1861 and 1867 prevailed.

STATION.	1861 *		1867.	
	Date of first case among European Troops.	Date of last case.	Date of first case among European Troops.	Date of last case.
Meean Meer	6th Augt. ...	23rd Sept. ...	27th June ...	2nd Sept.
Govindghur Fort	11th Sept. ...	14th Sept. ...	4th Aug. ...	15th Sept.
Umballa	29th July ...	4th Sept. ...	2nd May ...	25th Sept.
Delhi	4th July ...	1st Aug. ...	25th April ...	25th April.
Meerut	8th July ...	7th Aug. ...	15th Aug. ...	6th October.
Moradabad	2nd Augt. ...	14th Aug. ...	28th July ...	21st Aug.
Bareilly	23rd Augt. ...	24th Sept. ...	10th May ...	26th Aug.
Muttra	16th July ...	9th Aug. ...	14th May ...	14th May.
Morar	22nd July ...	20th Aug. ...	12th Aug. ...	15th Sept.
Gwalior Fort	25th July ...	21st Aug. ...	19th July ...	15th ditto.
Cawnpore	2nd April ...	23rd Aug. ...	13th May ...	15th ditto.
Allahabad	19th May ...	6th Aug. ...	28th July ...	24th Aug.

279. The comparative prevalence and fatality of cholera among the different arms of the service during 1867, will be seen from the annexed Table. In order to make the comparison fair, only those corps have been

Comparative prevalence of cholera in the different arms.

* The dates for 1861 have been taken from the Report of the Cholera Commission of that year, and those for 1867 from Dr. Beatson's Report.

taken which occupied the same stations. The figures have been taken from Dr. Beatson's Return A, but as the strength of men, women, and children is not separately stated, although the admissions and deaths from cholera are given for each class, it will be necessary to compare the results of all taken together.

Table shewing the comparative Sickness and Mortality from Cholera in the different Arms of the Service.

STATION.	ARTILLERY.					CAVALRY.					INFANTRY.				
	NUMBERS.			RATIO PER 1,000.		NUMBERS.			RATIO PER 1,000.		NUMBERS.			RATIO PER 1,000.	
	Strength.	Cases.	Deaths.	Cases.	Deaths.	Strength.	Cases.	Deaths.	Cases.	Deaths.	Strength.	Cases.	Deaths.	Cases.	Deaths.
Peshawur	534	76	45	...	...	...	...	...	...	...	1,500	212	129	...	...
Fort Lahore	72	4	2	...	...	...	...	...	...	...	103	1	1	...	...
Meean Meer	470	8	4	...	...	...	...	...	...	...	772	88	54	...	...
Ferozepore	163	14	3	...	...	...	...	...	...	...	888	16	12	...	...
Umballah	120	1	1	...	...	465	5	3	...	...	722	29	22	...	...
Meerut	553	9	9	...	...	505	2	2	...	...	963	155	133	...	...
Morar	474	7	6	...	...	...	...	...	...	...	694	11	5	...	...
Cawnpore	157	2	2	...	...	...	...	...	...	...	667	8	6	...	...
Allahabad	267	5	4	...	...	...	...	...	...	...	842	32	20	...	...
Bareilly	169	2	...	...	...	...	...	...	...	...	878	6	5	...	...
Lucknow	356	2	2	...	...	606	4	4	...	...	2,152	13	7	...	...
TOTAL	3,335	130	78	38.9	23.3	1,576	11	9	6.9	5.7	10,181	571	394	56.0	38.7

The Cavalry have escaped in a remarkable degree, and, as a rule, the Artillery have suffered much less than the Infantry. The Cholera Commission of 1861, in commenting on the unduly high proportion in which the Infantry suffered, observed that, if the returns for Meean Meer and Morar in which there had been great mismanagement were omitted, the disproportion also in a great measure disappeared, and the ratios in which the different arms of the service were attacked became nearly the same. "There is no reason to suppose", they observe, "that the men of any one branch of the service were more generally liable to the attack of cholera during the late epidemic than those of any other branch. Any slight apparent differences which remain against the Infantry may probably be accounted for by the fact that their numbers were greater." However the differences may be explained or accounted for, there is no doubt that the Infantry suffered more in the epidemic of 1867 than the Artillery, and very much more than the Cavalry.

280. There are no statistics to show the comparative prevalence of the disease among Officers and Non-Commissioned Officers, as compared with the rank and file. Among the first there was 13 cases and 9 deaths, but the strength is not recorded, while the cases among the Non-Commissioned Officers are returned along with those among the Privates.

281. The following very complete table, which has been prepared by Dr. Bryden, illustrates the comparative prevalence of the disease among men, women, and children :—

* *Statement shewing the comparative prevalence and fatality of epidemic Cholera among European soldiers, women and children in 1867.* *

STATION.	STRENGTH OF MAY 1867.			NUMBER OF ADMISSIONS AND DEATHS.						ADMITTED PER 1,000.			DIED PER 1,000.		
	MEN.	WOMEN.	CHILDREN.	MEN.		WOMEN.		CHILDREN.		MEN.	WOMEN.	CHILDREN.	MEN.	WOMEN.	CHILDREN.
				Admitted.	Died.	Admitted.	Died.	Admitted.	Died.						
Fyzabad ...	922	115	215	3	2	3	2	2	2	3.3	26.1	9.3	2.17	17.39	9.30
Lucknow ...	2,558	243	402	11	6	5	4	4	3	4.3	20.6	9.9	2.35	16.46	7.44
Sectapore ...	576	55	95	8	6	4	3	3	3	13.9	72.7	31.6	10.42	54.55	31.58
Allahabad ...	984	103	160	28	18	3	1	5	5	28.4	29.1	31.2	18.29	9.71	31.25
Cawnpore ...	768	81	152	3	2	3	3	3	2	3.9	37.0	19.7	2.60	37.04	13.16
Shahjehanpore ...	466	51	85	24	19	1	1	1	1	51.5	19.6	11.8	40.77	19.61	11.76
Bareilly ...	803	87	124	3	2	4	3	1	1	3.7	46.0	8.1	2.49	3.48	8.06
Moradabad ...	307	30	55	7	5	10	5	8	6	22.8	333.3	145.5	16.28	166.66	109.09
Meerut ...	1,655	193	296	124	112	18	11	28	22	74.9	93.2	94.6	67.67	57.00	74.33
Delhi ...	354	30	36	1	1	...	...	...	...	2.8	...	...	2.82	...	...
Muttra ...	405	29	50	1	1	...	...	...	...	2.5	...	...	2.47	...	...
Moran ...	867	97	165	15	10	...	...	5	5	17.3	...	30.3	11.53	...	30.30
Gwalior Citadel ...	220	39	70	8	4	1	1	4	3	36.4	25.7	57.1	18.18	25.64	42.86
Umballa ...	1,325	68	126	29	22	3	3	...	...	21.9	44.1	...	16.60	44.12	...
Kussowlic ...	334	26	53	1	1	...	...	5	3	3.0	...	15.0	3.00	...	9.00
Subathoo ...	792	48	72	40	19	5	1	10	8	50.5	104.2	138.9	24.00	20.83	111.11
Jullundur ...	792	67	107	12	9	3	3	4	3	15.1	44.8	37.4	11.36	44.78	28.04
Ferozepore ...	829	96	107	16	8	8	5	3	2	19.3	83.3	28.0	9.64	52.08	18.70
Sealkote ...	1,306	98	184	...	...	2	2	...	...	...	20.4	...	...	20.41	...
Dhumsalla ...	109	1	2	1	1	...	...	...	...	9.2	...	...	9.18	...	...
Umritsur ...	136	4	4	1	1	...	...	...	...	7.4	...	...	7.35	...	...
Fort Lahore ...	161	7	9	4	2	...	...	1	1	24.2	...	111.1	12.20	...	111.11
Meean Meer ...	1,132	91	186	86	52	5	3	2	2	76.0	55.0	10.8	45.94	32.97	10.75
Rawul Pindee ...	1,346	159	234	...	...	5	2	18	13	...	31.5	76.9	...	12.58	55.56
Murree and Family Camps ...	279	71	140	7	3	2	2	4	4	25.1	28.2	27.8	10.75	28.17	27.78
Nowshera ...	788	54	89	5	2	...	...	...	...	6.3	...	...	2.54	...	...
Peshawur ...	1,755	117	174	274	163	5	3	9	7	156.1	42.7	51.7	92.88	25.64	40.23
Agra ...	974	102	137	...	...	1	1	...	...	...	10.0	...	...	9.80	...
TOTAL ...	22,946	2,162	3,529	712	471	91	59	120	96	31.0	42.0	34.0	20.5	27.2	27.2

It will be observed that at the stations of Sealkote, Rawul Pindee, and Agra, in which the men entirely escaped the disease, their wives and children suffered

* The results here shown vary from those in the general Tables, as the strength given is that for May and not the average for the year. This statement, moreover, includes only the epidemic area and not the whole Presidency.

to a slight degree. In others again, where the men were attacked, their families preserved a complete immunity from the disease. In individual stations the numbers are too small to form the basis of any accurate conclusions, but taken as a whole, it appears that the admissions were highest among the women (42·0 per 1,000), next among the children (34·0), and lowest among the men (31·0); among women and children the death-rate, 27·2 per 1,000, was the same, and among men it was 20·5.

282. Taking admissions and deaths among men and women together, the Comparative prevalence ratios are respectively 31·9 and 21·1 per 1,000. among children and adults. Among children the admission rate has been 34, and the death-rate 27·2. The large proportion of the cases among children which terminated fatally is deserving of notice. Out of 120 attacked 96 died, or a ratio of 800 per 1,000. Among women the mortality was 64·8 per cent. of cases.

283. Dr. Bryden's Table also further illustrates the comparative prevalence and fatality of the disease among all classes at the different stations attacked. In order of admissions per 1,000 British soldiers, Peshawur with 156·1 occupies the highest place, and after it come Meean Meer 76, Meerut 74·9, Shajehanpore 51·5, Subathoo 50·5; according to relative death-rates, the order is somewhat altered. Peshawur is still first (92·88), then comes Meerut (67·67), Meean Meer (45·94), Shajehanpore (40·77), and Subathoo only 24·00.

284. Taking the deaths from cholera among European soldiers according to age, it will be seen that all have suffered to nearly an equal extent, the ratios of deaths at different periods of life having varied during 1867 only from 11·65 to 15·82, per 1,000. Influence of age. If the results of the past five years be compared as a whole the facts are still more remarkable, for the average death-rate from cholera at different ages varies only from 4·06 to 5·10, or little more than 1 per 1,000. The particulars may thus be shown :—

Statement shewing the relation of age to mortality from Cholera among British Soldiers in the Bengal Presidency during the five Years 1863 to 1867.

YEARS.	Under 20.	20-24.	25-29.	30 and upwards.
1863 	1·49	4·91	3·68	2·50
1864 	3·97	1·82	2·71	2·21
1865 	2·07	1·98	3·59	3·54
1866 	·00	1·00	1·39	1·28
1867 	12·81	15·82	11·65	12·99
Average of deaths from cholera during the five years ...	4·06	5·10	4·60	4·50

This table may with advantage be compared with the following :—

Statement shewing the relation of age to mortality among British Soldiers in the Bengal Presidency from all causes except Cholera during the five Years 1863 to 1867.

YEARS.	Under 20.	20-24.	25-29.	30 and upwards.
1863	5.98	13.95	24.46	26.16
1864	9.92	9.51	20.78	27.54
1865	6.20	10.35	21.15	34.78
1866	4.80	10.78	16.60	26.03
1867	3.90	10.63	14.19	26.25
Average deaths from all other causes during the five years.	6.16	11.04	19.43	28.15

The equable ratio which is maintained as regards cholera altogether disappears when other causes are considered, and here the death-rate steadily rises with age from 6.16 to 28.15 per 1,000.

285. Regarding the influence of habits in pre-disposing to attacks of cholera very little definite information can be obtained. The returns of temperate and intemperate soldiers and their relative liability to disease during 1867 have not yet been received, but even had they been prepared, no reliable conclusions can be drawn from the data they contain. Very different meanings attach to the words “temperate” and “intemperate,” and there can be no doubt that the number of those who indulge in intoxicating liquors is much larger than what is stated in the returns. From a special return prepared by the Inspector General of Hospitals, in which the habits of those attacked have been noted, it would appear that out of 793 men and women attacked 744 were temperate and only 49 intemperate.

286. The influence of previous state of health as affecting the liability to attack, has received attention during the late epidemic, and returns have been prepared showing the condition of those who suffered from the disease. The results are as follow :—708 persons were reported to have been previously in “good” health, 26 in “fair” health, 103 in “indifferent” health, 8 were “weakly,” 13 “delicate,” and 52 were in a “bad” state of health. If these data, which include men, women, and children, be correct, they appear to show that previous condition has little, if any, influence in determining or warding off an attack.

287. Of 895 cases in which the place of seizure has been noted, it appears that 304 were attacked in barracks, 536 in camp, and 55 in hospital. The number of those under treatment, moreover, includes only a smaller than it was in 1861, when 173

patients in hospital suffering from other diseases were seized with cholera. This result must be considered so far satisfactory. There is no return to show how many of those on duty in the hospitals suffered, but from the narratives already given, the proportion must have been small.

288. The returns showed that in 521 cases, the hours at which the attack took place were as follow :—

Hours at which attacked ...	A. M.												P. M.											
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
Number of attacks at each hour	17	18	2	24	3	1	21	5	32	7	28	5	25	3	39	2	24	5	22	3	21	1	19	4
	11	18	2	24	3	1	21	5	32	7	28	5	25	3	39	2	24	5	22	3	21	1	19	4

The hours at which 902 cases were admitted into hospital have also been recorded, and the result is shown in the following statement :—

Hours at which admitted ...	A. M.												P. M.											
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
Number admitted at each hour	31	31	2	34	25	1	43	1	85	5	59	3	42	1	2	51	5	40	1	45	1	21	33	1
	31	31	2	34	25	1	43	1	85	5	59	3	42	1	2	51	5	40	1	45	1	21	33	1

From these data no general conclusions appear to be warranted, but the facts are worthy of record. The large numbers admitted in the mornings and evenings would lead to the belief that early treatment was not had recourse to in many cases in which it would have been beneficial.

289. An examination of the duration of the disease in the fatal cases shows that the average length of time in which death took place was 34 hours. Some are reported to have died within three hours after being first attacked, while others lingered as long as 29 days. In 555 cases, in which the period of the disease at which death took place has been noted, 437 died in the state of collapse, and 118 in reaction. In 600 cases, suppression of urine is said to have occurred.

290. Between the years 1818 and 1853-54, the proportion of cases of cholera among European troops which proved fatal, had risen from 26·7 to 42 per cent. in the Bengal Presidency. In Bombay and Madras the increase of mortality had been even greater, for in the one the ratio of deaths to cases

had increased from 18·5 to 45·5, and in the other from 27·1 to 62·3. Since 1853-54, the results in Bengal have been as follow :—

Statement shewing the proportion of deaths to cases of Cholera among European Troops, Native Troops and Prisoners.

YEAR.	DIED PER CENT. OF ADMISSIONS.		
	European Troops.	Native Troops.	Jails.
1854-55	50·54	No records	39·29
1855-56	50·00	...	47·50
1856-57	53·62	...	45·95
1858	54·33	...	41·18
1859	50·17	37·67	46·57
1860	53·25	46·33	37·55
1861	64·04	41·90	41·63
1862	61·28	50·28	36·36
1863	75·11	57·00	40·10
1864	69·59	43·97	37·31
1865	72·50	49·73	45·69
1866	60·00	54·60	44·33
1867	66·07	50·82	42·88

The increase in the fatality of the disease among European troops since 1861 has been even more marked than previously. The results of the past seven years show, that out of every hundred Europeans attacked with cholera, 66·94 on an average died, while the average of the previous six years was only 51·9. If women and children were included, the death-rate would be even higher. Such unsatisfactory results need no comment; when medicine is so powerless to cope with the disease, sanitary and preventive measures assume a paramount importance.

291. To this table have been added the ratios of fatal cases among Native troops and also among prisoners. It is remarkable that the largest proportion of recoveries should have occurred among the last, many of whom are received into jail old, weak and ill-nourished. The explanation may perhaps consist in the fact that a sick prisoner can hardly escape observation, and that medical treatment in cholera is successful in proportion to the promptitude with which it is had recourse to. In each of the years regarding which information is available,* the ratio of fatal cases has been less amongst prisoners than among Native soldiers, and very much less among Native soldiers than among European troops.

292. The comparative prevalence of cholera among European and Native soldiers has already been illustrated by the admissions and deaths from the disease among each of which have occurred in the different groups

Comparative prevalence of cholera among European and Native soldiers.

*Excepting 1859.

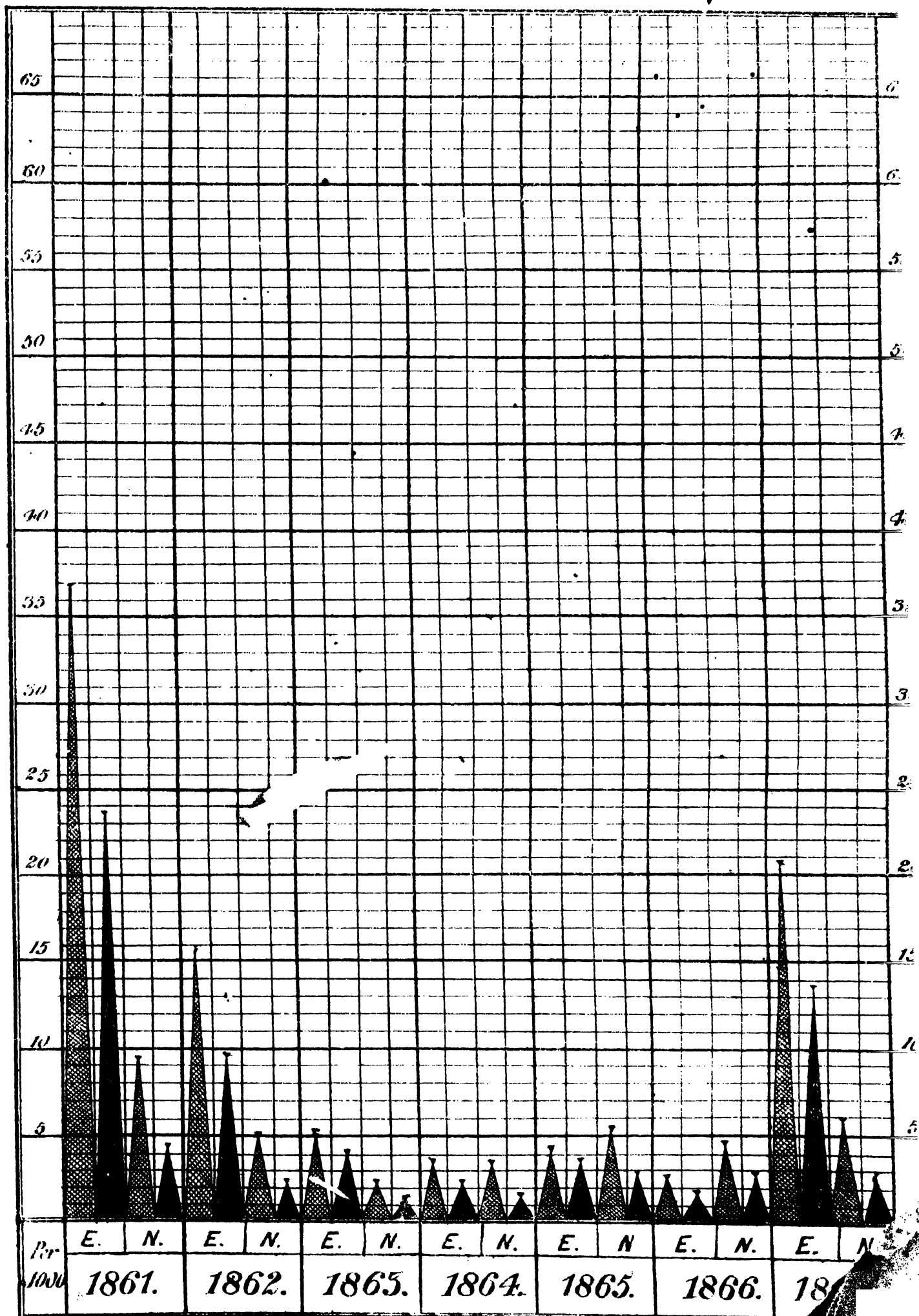


Diagram to illustrate Comparative Ratios of Admission

shown in Dr. Bryden's Table. The comparative immunity of the Natives will be more distinctly seen by taking the totals of each year.

Statement shewing the comparative prevalence of Cholera among European and Native Soldiers in the Bengal Presidency from 1861 to 1867.

YEAR.	EUROPEAN SOLDIERS.		NATIVE SOLDIERS.		PRISONERS.	
	RATIO PER 1,000.		RATIO PER 1,000.		RATIO PER 1,000.	
	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.
1861	37.1	23.73	9.8	4.09	36.5	15.21
1862	15.7	9.61	5.0	2.51	15.2	5.52
1863	5.5	4.09	2.6	1.52	35.8	14.33
1864	3.7	2.55	3.8	1.67	22.9	8.56
1865	4.3	3.12	5.7	2.83	15.8	7.19
1866	2.3	1.37	4.7	2.54	27.2	12.10
1867	20.9	13.78	6.2	2.96	11.5	4.94

The remarkable immunity which the Native soldiers have enjoyed, when compared with Europeans, is more strikingly illustrated in the annexed diagram.

293. The immunity which the Native troops have enjoyed is not only

Cause of comparative immunity of Native soldiers.

shown in the general results, especially of epidemic years, but is illustrated by the history of the disease in every cantonment in which it has prevailed.

In no single instance, excepting that of Deolee, have the Native troops, during the past year, suffered to any considerable extent, and at every station which was visited by the epidemic, even when the European soldiers were attacked in large numbers, the loss of the Native regiments was trifling. Such a persistent and remarkable contrast cannot be due to any mere fortuitous cause, but no satisfactory explanation has yet been offered to account for it. That Natives are by no means exempt from the disease is sufficiently shown by its prevalence and fatality among the ordinary population of the country during 1867. The sepoys are better fed, better clothed, and placed altogether in much better sanitary conditions than the inhabitants of towns, and it is therefore easy to understand why they should suffer less. But the condition of the sepoy is in no respect better than, nor indeed by any means so good in a sanitary point of view as, that of the British soldier. In the epidemic of 1861, it was suggested that there were only two essential conditions of this nature in which the two differed. The one lived in small separate huts and did not use latrines, while the others were brought together in barracks and frequented privies common to a number of men. Additional force was given to these statements, as in all probability explaining the very different degree in which the two classes were attacked, by the facts that the Goorkhas, who suffer to a much greater extent than ordinary sepoys, are singular in having their families with them and in providing latrines in their lines, while at the same time a similar difference appeared to explain the prevalence of

cholera in towns and villages which generally abound in ill-kept privies and cess-pools. But since 1861 considerable changes have been effected in the sanitary administration of cantonments. The Native soldiers no longer are allowed as a rule to resort to the jungle, and it has been ascertained that during the epidemic of 1867, in nearly every station which was attacked, they had recourse to the regimental latrines. The only essential difference, therefore, that remains in the circumstances calculated to affect the sanitary condition of the British soldier, compared with the sepoy, is, that while the former is one of a number occupying the same barrack, the latter has generally a hut shared with one or more comrades.

SECTION IV.

GENERAL CONCLUSIONS.

294. Such are the facts which have been collected with regard to this great epidemic. In some respects they are imperfect, and many details which would have proved both interesting and instructive are wanting. Still, as a whole, the mass of information is very great, and it now remains to consider what general conclusions can be drawn from it, how far our knowledge of the nature of cholera and of the manner of its spread has been increased or modified, how far the measures which have been recommended for its prevention have been attended with benefit, and to what extent, if any, these measures may be altered or improved. These great and important questions may be discussed as they affect the general population, the prisoners and the troops—the order in which the different portions of the community have already been considered in the preceding sections.

295. The cause of the outbreak at Hurdwar remains unknown. The history of the fair for years conclusively shows that filth alone cannot generate the disease, even when aided by such favorable conditions as were afforded by an immense mass of human beings collected together in circumstances best calculated to foster it. But the history of the fair of 1867 also conclusively shows the great advantages of good general arrangements, and the necessity for a better mode of conservancy. The measures for treating the sick were well planned and carried out, and the endeavor to prevent the entrance of all contagious diseases was also excellent. But in dealing with so great a multitude, such an endeavor, however patiently and energetically executed, is always liable to fail, and this great risk of failure necessitates that the conservancy arrangements should be as nearly as possible perfect, and that the sewage should be so disposed of as to render all pollution both of air and water impossible. In this view of the case trench latrines within the camp should on no account be allowed, but all ordure should be removed outside. The necessity for removal may be obviated to a considerable extent by obliging the people to resort to latrines placed without, or if the distance to be thus travelled be too great, they can at all events be erected towards the outer margin of the ground on which the multitude is residing. There will doubtless be great difficulty in carrying out such a scheme, there will also be great expense, but it is indispensable that no flaw should exist in any measures adopted for the protection of the people.

296. In order to carry out proper measures for the safety both of the health and lives of the pilgrims, a large expenditure will be entailed. In the fair of 1867, Rs. 3,098 were spent on filling up holes in, and reducing the depth of the river in front of, the

ghauts, and Rs. 22,500 on the bridges made to facilitate the passage of the vast number of bathers. The extension of the bathing-places besides cost Rs. 2,232, and the cost of the conservancy, sanitary, and medical arrangements amounted to Rs. 14,689-2-10, or a sum total of Rs. 42,519-2-10. In smaller fairs so large an outlay would not perhaps be required, but if more efficient disposal of the sewage were ensured, the expense under this head would be much increased.

297. It is undoubtedly right and fair that those who necessitate the expenditure of so much money, and for whose comfort and convenience it is laid out, should contribute towards its payment, but in what manner this payment is to be made is a question of some difficulty. It has been proposed by the Madras Sanitary Commissioner that tickets should be issued "on the payment of a small fee to all persons actually resorting to the place of congress, on the understanding that without such tickets admission will not be granted." At Conjeveram, where the number of pilgrims does not exceed 200,000, such a plan might be carried out, but with three millions or even only one million it would be practically impossible, and no matter what the number, its adoption would prove a fruitful source of extortion by the native officials. At Hurdwar, after deducting costs of collection, the receipts on account of rent of Government land in road frontages, &c., amounted to Rs. 9,672, and such a mode of raising money is evidently the simplest and least liable to be abused. A ground rent levied in such proportion as to meet all expenses should be imposed at all fairs and religious assemblies where such a mode of raising funds can be conveniently adopted.

298. Although there appears to be a general concurrence of opinion that the multitudes who frequent shrines and fairs should meet the expenses of the arrangements which their presence renders necessary, very different views have been expressed as to the manner in which the money should be raised. At some places the system recommended by the Sanitary Commissioner for Madras has been already successfully carried out. At Punderpore in the Bombay Presidency, a tax of 4 annas has been taken from each pilgrim. By others an octroi duty on articles of consumption taken to the fair has been recommended. The exact mode in which the requisite funds are to be procured is not a sanitary question, and perhaps diversity of practice might best suit the natural peculiarities of the places of pilgrimage, and also the very varying numbers which assemble at each. A tax raised not for the benefit of imperial revenue could hardly be misunderstood. It should be called a conservancy rate and should be devoted exclusively to an efficient system of conservancy for the particular place at which it is collected. It might also serve to remove any prejudices on the part of the people, and help to disabuse their minds of any mistaken ideas on the subject if the receipts and disbursements at each fair were published for general information in the Government Gazette. The amount of rate in each case would naturally vary with circumstances, but it appears advisable that it should be such as to provide for efficient conservancy and

299. Again it has been suggested that persons ought not to be allowed to undertake a pilgrimage until they have satisfied the authorities of the district from which they proceed that they have the requisite means, and have been provided with a pass. Such a measure could not be carried into effect without exciting the suspicions of the Natives; and leading them to believe that their religious liberties were being invaded. Any control over the freedom of a people, unless absolutely necessary, is extremely objectionable, and such a scheme, however well planned, could not be put in execution without opening a way to great oppression. It has further been proposed that whenever cholera or other epidemic disease prevails in a district, its inhabitants should not be allowed to frequent any of the great national fairs. But to this proposal the same objections exist as have already been stated with regard to the general question of control. As education increases and the light of civilization spreads, the virtues of a visit to the Ganges or to the temple of Juggernath will become smaller and smaller in the estimation of the people, and the shrines which their forefathers revered will be held less and less holy in their eyes. In the present day all that appears to be advisable is to suggest that every district officer should annually warn the inhabitants of the great danger with which fairs are fraught both to their health and lives.

300. Having noticed the chief points which demand attention in relation to the great Hurdwar gathering of 1867, the next point to be considered is the dispersion of the pilgrims, and the effect which they had in the dissemination of the disease. On this question the facts have been narrated with great care; every statement of any importance has been given, for the evidence has been considered not with the object of supporting any preconceived theory on the mode of propagation of the disease, but with the sole view of endeavoring to ascertain the truth. Did the pilgrims as they returned to their homes carry cholera with them, and thereby occasion the outbreak which subsequently followed in the various districts through which they traversed, or to which they themselves belonged?

301. On the first part of this question there can be no difference of opinion. That cholera went with the pilgrims from Hurdwar and accompanied them to a greater or less distance in every direction from it is a fact which admits of no dispute. The history of their return which has been already given illustrates this point so clearly that it is not necessary to recapitulate the facts. Suffice it to say that the pilgrims bore the disease with them to a distance varying from 50 to 300 miles in almost every point of the compass.

302. This fact in-itself may be regarded as evidence of communicability of the disease. That the pilgrims imbibed the poison at Hurdwar in large numbers cannot be doubted, but it is not probable that the disease should remain latent so very long as to appear among some of them only when they had reached places so far distant as the Upper Provinces of the Punjab. At Goojerat, for example, the

first case was a pilgrim who was attacked there on the 28th April. In Cashmere the first cases were pilgrims who were attacked in the second week of June. Judging from all that is yet known of the disease, it appears much more probable, that these and others who were seized weeks after they had left Hurdwar were infected by pilgrims in whose company they had travelled, than that the germ of the disease had remained all that time undeveloped within their systems.

303. But the details regarding the advent of cholera-stricken pilgrims and the subsequent appearance of this disease among the general population of the districts who had previously been altogether free from it, are very much stronger. It will be necessary in this point of the enquiry to separate the facts as they have been stated from the opinions with regard to them which have been expressed by the various observers, for though the latter are very valuable they cannot be accepted in evidence as carrying the same weight as the former. The facts have been already recited. Below Allyghur on the south, and Shajehanpore on the south-east, no connection can be traced between the return of pilgrims from Hurdwar and the subsequent appearance of cholera. The history of the occurrence of the first case in all those districts which lie to the north and north-west is shortly recapitulated in the annexed statement.

*Statement showing the facts connected with the appearance of Cholera in
51 Districts or Stations in 1867.*

No.	District or Station.	Date of first case of Cholera	Whether a Pilgrim or not.	REMARKS.
1	Seharunpore	13th April	A pilgrim.	
2	Roorkee	13th "	Ditto.	
3	Deyrah	16th "	A traveller and probably a pilgrim.	
4	Mozuffernuggur	15th "	A pilgrim.	
5	Bijnour	13th "	Ditto.	
6	Moradabad	15th "	Ditto.	
7	" Cantonment	16th "	Ditto.	
8	Nynce Tal	22nd "	Ditto.	
9	Almorah	25th "	Ditto.	
10	Foot of Kumaon Hills	19th "	Ditto.	
11	Bareilly	18th "	Ditto.	
12	Budaon	18th "	Ditto.	
13	Shajehanpore	24th "	Ditto.	
14	Meerut	16th "	Ditto.	{ A doubtful case in a non-pilgrim on the 14th instant; pilgrims had by that time commenced to return.
15	Boolundshuhur	19th "	Ditto.	
16	Allyghur	20th "	Not a pilgrim.	{ Pilgrims had commenced to return. Between 1st March and 21st April, two doubtful cases.
17	Goorgaon	21st "	A pilgrim.	
18	Delhi	15th "	Ditto.	
19	Rohtuck	13th "	Ditto.	
20	Hissar	20th "	Ditto.	
21	Sirsa	22nd "	Ditto.	
22	Kurraul	16th "	Ditto.	
23	Umballah	13th "	Ditto.	{ A non-pilgrim also attacked same day.
24	Lawrence Military Asylum	25th "	Ditto.	
25	Simla	20th "	A traveller.	
26	Loodianah	18th "	A pilgrim.	
27	Ferozepore	22nd "	Ditto.	
28	" Cantonment	24th "	Ditto.	
29	Jullundur	19th "	Ditto.	
30	Kangra	25th "	Ditto.	

*Statement showing the facts connected with the appearance of Cholera in
51 Districts or Stations in 1867,—Continued.*

No.	District or Station.	Date of first case of Cholera.	Whether a Pilgrim or not.	REMARKS.
31	Hoshiarpore	19th April	A pilgrim.	
32	Umritsur	22nd "	Ditto.	
33	Goordaspore	25th "	Ditto.	
34	Sealkote	20th "	Ditto.	
35	Lahore	24th "	Ditto.	
36	Montgomery	25th "	Ditto.	
37	Mooltan	26th "	Ditto.	
38	Mozufferghur	13th July	First case not traced to pilgrims.	
39	Jhung	1st June	Ditto.	
40	Gojranwallah	29th April	A pilgrim.	
41	Gojrat	28th "	Ditto.	
42	Shahpore	June	Not traced.	{ On the bridge passed by 200 pilgrims the day he was attacked.
43	Jhelum	30th April	A boatman.	
44	Rawul Pindee	30th "	A pilgrim.	
45	Murree	10th June	Not a pilgrim.	
46	Huzara	17th May	2 Policemen.	
47	Peshawur	11th "	Not a pilgrim.	{ Returned from Kangra District where cholera was prevalent.
48	Bunnoo	31st July	2 Sepoys.	
49	Dera Ishmael Khan	5th August	Not pilgrims.	
50	Dera Gazee Khan	June	No information.	
51	Cashmere	8th June	Pilgrims.	{ Sepoys who had been at Hurdwar.

304. The facts exhibited in this statement are conveniently shown in the annexed map, in which the relative position of the different places, the main lines of communication, and the dates on which the first well authenticated cases occurred have all been entered. The results may thus be summarized. Excepting Goorgaon in which the history of the first case is doubtful, no cholera appeared in any of these 51 stations or districts until ample time had elapsed for the pilgrims to re-appear or for others to enter them from infected places. There was no simultaneous outbreak of the disease over a large area. But the general evidence is not merely negative, for excepting Goorgaon there was no cholera in any of the fifty-one places named, until the pilgrims actually had returned, and even in Goorgaon the epidemic prevalence of the disease dates from their return. The fact is of importance even although the outbreak of cholera took place in a few districts at so late a date as to render its having any direct connection with pilgrims very improbable.

305. But even more remarkable is the evidence that in most instances the first cases nearly always pilgrims. the first cases in the district were pilgrims who had been to Hurdwar. In thirty-five out of the fifty-one districts the first persons attacked were pilgrims, and after they had been seized, the disease appeared and spread among the residents. In this number is not included the case of Deyrah in which the first seizure was a traveller and probably a pilgrim, nor Meerut where the first case occurring in a resident was doubtful, nor Allyghur, nor Goorgaon nor Umballa in which two persons, a pilgrim and a non-pilgrim, were seized the same day, nor Jhelum where the first person attacked was a boatman at the ferry crossed by the pilgrims.

any other place regarding which any doubt has been expressed, and yet there remain thirty-five cases out of fifty-one in which there is the clear statement of the Medical or district officer, and sometimes of both that the pilgrims were the first victims.

306. And in addition to these facts there are the decided opinions of the numerous Medical and Civil officers by whom the facts were observed. Thirty-two Medical officers,* many of them men of great experience, who were indefatigable in carrying

* Dr. Cutcliffe, Seharanpore.
Dr. J. P. Walker, Boorkee.
Dr. Banister, Deyrah.
Dr. Kirton, Mozuffernagar.
Dr. Gardner, Bijnour.
Dr. Collison, Moradabad.
Dr. Govan, Almorah.
Dr. J. C. Corbyn, Bareilly.
Dr. Walsh, Budaon.
Dr. Harris, Shajehanpore.
Dr. Moir, Meerut.
Dr. Birch, Goorgaon.
Dr. Taylor, Delhi.
Dr. Penney, " "
Dr. Dickson, Rohtuck.
Mr. Minas, Hissar.
Mr. Nalty, Sirsa.
Dr. Newton, Kurawal.

Dr. Bateson, Umballa.
Dr. Wilson Johnstone, Loodiana.
Dr. Williams, Ferozepore.
Dr. Verchere, Jullundur.
Mr. Barnes, Hoshiarpore.
Dr. Oldham, Goordaspore.
Sub-Assistant Surgeon Robinson, Mohun Mitter, Sealoke.
Dr. C. M. Smith, Lahore.
Dr. Kinganill, Montgomery.
Dr. DeRenzy, Multan.
Mr. Harrison, Mozuffernagar.
Mr. Mitnish, Jhang.
Dr. Dallas, Inspector General of Prisons, Punjab.
Dr. D. Wright, Katmandoo.

out arrangements for the care of the devotees, and most careful in ascertaining the facts connected with the appearance of the disease within the limits of their own charges, are decidedly of opinion that the cholera was imported by the pilgrims. In the instance of Allyghur Dr. Kilkelly has stated his opinion that while he believes much of the spread of the disease

was due to importation, there was also much which could not be traced to this cause. In other districts the Medical officers have been unable to satisfy themselves that the epidemic was due to importation, or they see no reason to believe that it was imported, but it is a very noteworthy fact that in no case has any positive evidence been advanced to show that such a cause was improbable, much less that it was impossible.

307. There are only two ways in which these facts can be satisfactorily disposed of. Either they must be set aside altogether as untrustworthy, or they must be accepted as making out a very strong case in favor of the opinion that cholera is spread by human intercourse. It is very possible that the facts may, to some extent, be incorrect, but it is quite impossible that the whole story of the returning pilgrims carrying cholera with them from Hurdwar to Rawul Pindee, with the dates of its appearance in the successive districts through which they passed, can have been invented. Besides, many of the circumstances came to the personal notice of the officials by whom they have been narrated. The facts, therefore, cannot be set aside, and if they be admitted as conveying even an approximation to the truth, the history is very instructive. It cannot be regarded as a mere coincidence that in thirty-five districts of Upper India, covering an area larger much than that of Great Britain, the epidemic should have gradually appeared in one place after another immediately after the return of a body of persons stricken with the disease.

308. If not by the pilgrims how was the disease spread? It could not have been carried by the wind in all directions at one and the same time, nor is it probable that the force of the wind should have exactly kept pace with the speed of the pilgrims. There are, no doubt, difficulties to be explained under any theory which attempts to account for the facts. How, for example, did it happen that while

the pilgrims proceeding upwards appear to have carried the disease among the whole community, the pilgrims travelling in the Agra and Allahabad directions did not disseminate it? To this, all that can be said is, that in the present state of our knowledge the question admits of no satisfactory explanation.

309. But it is to be remarked that similar difficulties exist in regard to the spread of diseases the communicable nature of which is undisputed. Can it be explained, for example, why small-pox prevails in some years and not in others; why it is much more prevalent in India during April and May than in any other months of the year, and why it altogether disappears in September; why a case of any known contagious disease sometimes occurs single and alone, and at other times appears to be the signal for the outburst of an epidemic? It is a singular fact that all epidemic diseases, of which we have any accurate knowledge, are communicable, and, however fitful and inexplicable their course may be, it may fairly be assumed that every new case is usually, if not always, the progeny of a parent of a like kind, although the parentage often, and indeed generally, cannot be traced. The seed of a plant affords a not inapt analogy to what appears to be the most rational view of the germ of epidemic disease. In order to germinate and bear fruit, the seed must be good, it must fall in and be received into a suitable soil, it must be planted at the proper season and enjoy the advantages of climate and circumstances which are best adapted for its growth. Similar conditions appear to be necessary for the propagation of epidemics. With little doubt the germ of epidemic cholera appears to reside in the evacuations of a person suffering from the disease; the circumstances favorable for its development are filth and the want of proper sanitary arrangements. What the condition of the human body which constitutes a good soil for its reception, and what the climatic and other circumstances favorable to its growth, have yet to be determined.

310. Dr. Bryden, who has studied the general facts of the actual distribution of cholera in India with an industry and research which have been unsurpassed, and who, in his capacity of statistical officer, has enjoyed opportunities for the investigation which have never been afforded to any other enquirer, holds a very different opinion. So early as the 25th February he predicted the occurrence of the epidemic; his fears of its appearing being founded not on the dangers of the large mass of people to be collected at Hurdwar, but on his belief in the general laws, which, in his opinion, govern the disease. His very remarkable letter is as follows:—

“I think it worth while to suggest to you the chance of an outbreak of cholera at Hurdwar and over Kumaon and Ghurwal in April and May. The invading epidemic of November was, I think, spread over the whole area of Rohileund even up to the hills, and if this was the case, we are bound to expect its re-appearance from all parallel history; 1783, 1852, 1857, 1862 all teach the same lesson that a cholera of this distribution will re-appear. You should have specific enquiries now made as to the cholera of November and December 1866. To me it is indicated in five deaths of the 30th Nov.”

Infantry at Ghazeeabad, one in the 8th Native Infantry at Moradabad; a sepoy of the 3rd Goorkhas died on detachment at Ramghur on 17th December, and another man of the Sappers was attacked while returning to Roorkee from his home in the Putteala District. Dr. Walker notices two fatal cases in the Roorkee Bazar on 4th and 23rd December, and we know generally the fact of its appearance in Delhi and the neighbourhood at the same time. I do not know the strength of the body of cholera so distributed. As I have told you, I dread universality of spread as much as the strength of special outbreaks. We never know what the main body may be, of which these trifling indications are the mere index." * * * "I shall be glad to show you upon what my apprehensions are founded." The object of this communication was to direct attention to the probability of a distribution of cholera in 1867 parallel with that of the cholera of 1857-58 and 1862; and Dr. Bryden is prepared to shew that the anticipation has been realized.

311. But whatever theoretical differences of opinion may exist as to the propagation of cholera, the facts of the great epidemic of 1867, and its spread over Northern India, teach no doubtful lesson, and it is this that human intercourse plays a very great part in the diffusion of the disease, and that returning pilgrims, in particular, are very dangerous arrivals. How is their return to be regulated, and what measures can be adopted, as far as practical, to diminish the danger? The question is one of very great difficulty. Were sanitary considerations alone to be kept in view, it could be easily answered. In my letter to the Government of India, in the Military Department, No 312, dated the 29th May 1867, an opinion was expressed that quarantine should be established. Regarding the matter merely in a sanitary light that opinion remains unaltered, but a careful consideration of the many important points involved leads to the conclusion that any general attempt to enforce this measure is undesirable.

312. The difficulties attending any general enforcement of quarantine are practically very great, and it would certainly be attended with much hardship and oppression to the pilgrims. Quarantine was attempted in nearly every district in the Punjab and the upper part of the North-Western Provinces, and the results are generally spoken of as having been very successful. It is very doubtful, however, how far the two things can be regarded as cause and effect. The Civil Surgeon of Umritsur mentions in his report that "the pilgrims complained bitterly of the treatment they had received near—being driven off the regular road and forced to walk during the heat of the day for miles through heavy sand without food or water. In fact, they attributed a great many of the deaths to this cause." No system of strict quarantine can be carried out without great suffering to those concerned.

313. Strict quarantine against cholera was one of the measures recommended by the Constantinople International Congress, but there is a strong and growing opinion that such a measure is practically impossible. Mr.

26
29
30 | Opinion of English authorities on quarantine.

Simon's testimony at once to the value of such a measure, if it could be fully carried out, and also as to the impossibility of fulfilling this condition, is given at page 40 of his Eighth Report. "Subject to one qualification" he remarks "which is not an important one for the present argument, it may, I think, be accepted as certain, that quarantine, conducted with extreme rigour and with the precision of a chemical experiment, will keep cholera out of any part of Europe in which the extremely difficult conditions can be absolutely fulfilled, and thus if I speak to the dry question of medical practice, I have no hesitation in saying that England ought to resist cholera by quarantine. On the other hand, though I cannot pretend to discuss with any kind of authority the non-medical aspects of the question, it would be mere pedantry for me to ignore the facts which are of common notoriety, and considerations which are of common sense conflict with that medical conclusion. A quarantine which is ineffective is a mere irrational derangement of commerce; and a quarantine of the kind which ensures success is more easily imagined than realized." In his Ninth Report he refers to these remarks as still embodying his opinions on the subject, but quotes two instances "where quarantine seems to have been effectual."

314. On similar grounds, although it is admitted they do not apply with the same force to returning pilgrims, to attempt a general quarantine throughout India seems to be inadvisable, but the other general measures which were adopted are highly to be recommended. Setting apart special camps at easy distances, well supplied with good and pure water, and provided with proper conservancy arrangements; placing these halting places, as far as possible, off the main lines of communication; diverting the stream of pilgrims from large cities, towns, and Military stations; providing hospital accommodation and Medical treatment for the sick; disinfecting the discharges and clothes of all suffering from the disease; disposing of the dead, and insisting on general cleanliness among the concourse; these measures are no doubt calculated to effect much good.

315. But although a general quarantine is inadvisable, and, indeed, impossible, such a measure should certainly be adopted as regards the entrance of any persons into Military cantonments who are likely to convey the disease; and whenever the disease is abroad, communication should, as far as possible, be cut off between the station and the neighbouring city. Even here the system cannot be carried out in a perfect way, but it would appear that, the larger the body of infected people, the greater is the danger which they bring with them, and if the result be only to diminish the centre of infection and not to prevent its introduction altogether, much good may be anticipated.

316. And, although any general legislative enactment insisting on quarantine is open to great objections, Municipalities might be permitted to carry out such a measure whenever any unusual danger threatened. The general testimony which has been borne to the benefits of such an isolation

suspected persons, although it does not amount to proof, cannot be altogether ignored, and wherever the inhabitants of any city or town are in favor of such a mode of protection they should be allowed to adopt it. The mere knowledge, that all persons attending fairs might be liable on their return to such temporary restraint, would bring prominently into notice the danger of pilgrimages, and might diminish the number who would otherwise frequent them.

317. As regards the general population a most important measure which **General sanitation of towns and villages.** urgently requires attention is the general sanitation of towns and villages. Filth alone as has been shown cannot generate cholera, but once the germ of the disease has been introduced, there is no more powerful agent in favoring its spread. From the recent appointment of Sanitary Commissioners in the different provinces, and the carrying out of a general scheme of sanitary administration which will doubtless follow as one important part of their labors, many improvements which have not hitherto been possible may be looked for.

318. In September 1865 the Sanitary Commission for Bengal having been **Measures for preventing cholera in jails.** called on by the Government of India to advise what measures ought to be adopted to prevent the spread of epidemic diseases within jails and so reduce the very great mortality which had so frequently arisen from this cause, prepared a series of rules, and in these the precautions to be adopted with reference to cholera occupied a prominent place. These recommendations met with approval and were at once adopted in all the local Governments and Administrations with the exception of Lower Bengal, but here their introduction was opposed by the Inspector General of Prisons, who stated that "they contain much that is crude and erroneous with not a little that is absolutely impracticable, and that as they stand they are not suited for the management of the prisoners under his charge." It would not be necessary to advert to these objections had not Dr. Mouat's letter containing them been reprinted as an appendix to his last annual report. It is very desirable to ascertain how far they are supported by European investigation and research.

319. The rules with reference to cholera in jails which were framed **Rules drawn up by Sanitary Commission.** by the Sanitary Commission were issued, as has already been stated, in September 1865. The Report of the Medical officer of the Privy Council for 1866, copies of which reached India in the beginning of 1868, or two and a half years after the recommendations of the Sanitary Commission had been made, contains the latest orders and opinions of the highest English sanitary authorities on the preventive measures which ought to be adopted with reference to cholera. Without any word of comment, each rule which was objected to will be compared side by side with the ruling or opinion on the point which has been given by these authorities. The question of moving into camp on the appearance of the disease is a purely Indian question, and has no parallel in England. On this **Opinion on quarantine.** no comparison can therefore be made.

320. The question of establishing quarantine in all jails with a view to prevent the entrance of cholera and other communicable diseases may also best be separately considered, for the case of prisoners differs very materially from the circumstances of the free population of England. The measure was recommended for adoption in all jails, and it has been adopted throughout Northern India. A perfect quarantine, even as regards the convict population, is almost impossible, but a quarantine possessing a considerable degree of stringency can easily be carried out, and it can be effected without any of the objections which would attend its introduction among the people generally; it can lead to no oppression and can in no way disarrange commerce. It is not necessary to discuss this point at any further length. Practical results are of much greater value than mere theoretical opinions, and the introduction of even such an imperfect quarantine as has been practicable in the jails of the Upper Provinces has been attended with most excellent results.

321. With these exceptions the rules which were recommended by the Sanitary Commission for Bengal will now be compared with the views of the latest English authorities.

Rules recommended by the Sanitary Commission for Bengal in September 1865.	Rules and opinions given in the Ninth Report of the Medical Officer of the Privy Council, which reached India in the beginning of 1868.
<p><i>Measures to be taken for securing early intelligence regarding the approach and progress of cholera.</i></p> <p>I. "On the occurrence of cholera in any portion of a district, the Magistrate should at once inform the Superintendent of the jail, and in the event of any cases appearing in cantonments, the Deputy Inspector-General of Hospitals, or senior medical officer, should communicate the fact, without delay, to the medical officer in charge."</p> <p>II. "Any case occurring in a jail should be reported, without delay, to all the neighbouring jails, to the nearest civil, military, and medical authorities, and a daily report of the progress of the disease, and of the means taken to arrest it, should be made to the head of the department."</p> <p>"The object should be to spread information of the appearance of the disease in every direction in which it is likely to be of any use. Early information is particularly desirable, for in such a case to be forewarned is to be forearmed."</p> <p>III and IV. Not objected to.</p> <p>V. Regards quarantine arrangements.</p> <p>VI. "No <i>lotahs</i> should be allowed for drawing water from wells. A filthy string, tainted with choleraic diarrhoea, has been supposed to pollute a whole well and to cause cholera among those who drank of its water."</p>	<p>I and II. "In order that these objects should be promptly and adequately fulfilled in any district where cholera may show itself, it is necessary that all authorities who will be responsible for fulfilling them should batimes in their respective districts pre-consider and pre-arrange the measures which in case of need are to be taken," p. 228. "It is always to be desired that the people should as far as possible know what real precautions they can take against the disease which threatens them, what vigilance is needful with regard to its early symptoms and what (if any) special arrangements have been made for giving medical assistance within the district. Especially in case of small-pox or cholera, such information ought to be spread abroad by printed hand bills or placards," p. 235. <i>Also</i> p. 296, where an example is quoted of "the wisdom of these proceedings."</p> <p>VI. "There are two principal dangers against which extreme and exceptional vigilance ought to be used. First there is the danger of drinking water which is in any (even the slightest) degree tainted by house refuse or other like kinds of filth," p. 228.</p> <p>"It (the infective material) can infect in the most dangerous manner very large volumes of water," p. 230.</p> <p>"In the above described ways (of which the water is one), even a single case of disease, perhaps of the slightest degree, and perhaps quite unsuspected in its neighbourhood, may, if local circumstances co-operate, exert a terribly infective power on considerable masses of population," p. 230.</p> <p>"I have shown that the river Lea was infected with the discharges of cholera patients on the 26th and 27th June, (the discharges of the <i>first two</i> patients who died of epidemic cholera in the east districts").</p>

Rules recommended by the Sanitary Commission for Bengal in September 1865.	Rules and opinions given in the Ninth Report of the Medical Officer of the Privy Council, which reached India in the beginning of 1868.
<p>VII. "Regards moving into camp."</p> <p>VIII. "Not objected to."</p> <p>IX. "The barrack should be at once disinfected by means of sulphurous acid; the walls should be thoroughly scraped, the floor dug up to the depth of two or three inches; and the roof and rafters dusted, applying there-after, if available, three coats of a solution of Macdonald's powder of the strength of one pound to a gallon of water, or Condy's fluid or some other disinfectant, and laying fresh earth for the floor."</p> <p>"Sulphurous acid has been recommended, because it can be had at once in any station. All that is necessary for its production is to melt one or two ounces of common sulphur in a metal vessel over a fire. After a time, set fire to the whole and allow it to burn out."</p> <p>X. "The yard and all it contains should be thoroughly purified, and especially the privies, in the same manner as the barracks. If earthen pans or <i>navvies</i> have been in use in the privies they should all be immediately broken and buried."</p> <p>"All the scrapings, &c., resulting from these operations should be carefully collected and buried without delay."</p> <p>"These purifications ought, if possible, to be carried out by prisoners, who occupied the barrack where the case of cholera occurred."</p> <p>XI. "The clothing and bedding of all the inmates of the affected barracks should be immersed for ten minutes in boiling water, dried, and returned to them, they themselves having first well bathed."</p> <p>XII. "The man seized with cholera is on no account to be taken to hospital; a tent must be pitched for his reception. He must be attended by men from the affected barracks, who should be encouraged by sweetmeats and other rewards to do their duty well."</p> <p>XIII. "One Native Doctor should, wherever practicable, be told off for this temporary hospital, and neither he nor any of the attendants employed there should be allowed to enter the ordinary hospitals."</p>	<p>"This conclusion (that the pollution of the water in common use, distributed from old Ford, with cholera poison was the cause of the explosion of cholera in the east districts), if admitted, brings the whole of the facts of the explosion into ready accordance, one with another, and supplies a sufficient and legitimate explanation of its origin. It is true, indeed, that the conclusion involves the assumption of the propagation of choleraic decomposition to a larger volume of water laden with excrementitious matter, (the locked portion of the Lea from Old Ford to Bromley), than hitherto supposed, and the efficiency of the choleraic poison under a condition of enormous dilution, not previously surmised, and these assumptions must not be lost sight of in estimating the probability of the conclusion," p. 311.</p> <p>"It must be borne in mind that chemical investigation is utterly unable to detect the presence of choleraic poison amongst the organic impurities of water, and there can be no doubt that this poison may be present in quantity, fatal to the consumer, though far too minute to be detected by the most delicate chemical research," Professor Frankland, p. 344.</p> <p>Speaking of Mr. Radcliffe's conclusion, "that the water of the reservoirs considered as drinking water had in it a power of direct infectiveness for those who drank it," Mr. Simon remarks, "after giving my most careful judgment to the case, I feel bound to say that the facts adduced by him, seem to me as a whole almost irresistibly to force the substance of his conclusion on the mind; but some of the exceptional cases are apparently strong facts to the contrary," p. 366.</p> <p>IX. "For the disinfection of the interior of houses the ceiling and walls should be washed with warm quick lime water, &c., &c.," p. 238.</p> <p>"A room no longer occupied may be disinfected by chlorine gas or nitrous acid gas or sulphurous acid gas. * * * * * The gases may be produced—sulphurous acid by burning an ounce or two of flowers of sulphur in a pipkin," p. 238.</p> <p>X. "During the emptying of privies and cesspools, and whenever else temporary disinfection is required for them, carbolic acid or sulphate of iron or perchloride of iron, &c., will be found available, * * * * * especially where cholera is present, privies ought to be very carefully flooded in this manner," p. 237.</p> <p>XI. "Linen or washing apparel requiring to be disinfected * * * * * or the articles in question may be plunged into boiling water and afterwards when at wash be actually boiled in the washing water," p. 238.</p> <p>XII and XIII. One of the directions and regulations in relation to Asiatic Cholera issued by the Lords of the Privy Council in July 1866, is framed "to provide for the separation of the sick from the healthy, in the same dwelling," p. 225., "all reasonable care should be taken not to spread infective disease by the unnecessary association of sick with healthy persons." Directions relative to Asiatic Cholera," p. 235.</p>

Rules recommended by the Sanitary Commission for Bengal in September 1865.	Rules and opinions given in the Ninth Report of the Medical Officer of the Privy Council, which reached India in the beginning of 1868.
<p>XIV. "The dejecta should be received in earthen vessels containing dry earth and some disinfectant and be immediately buried."</p> <p>XV. "The attendants should invariably wash their hands with some disinfectant when leaving the sick man."</p> <p>XVI. "A privy or stool-pan used by the cholera patient should on no account be used by any one else."</p>	<p>XIV—XVI. "When it is desirable to disinfect before throwing away the evacuations from the bowels of persons suffering from cholera, some of the disinfectant should be put into the bed pan or other vessels before it is used by the patient, and some more should be added immediately after, * * * care should also be taken that portions of the discharges do not remain about the patient's body or in his dress," p. 238.</p>
<p>XVII. "On the recovery or death of the patient, his bedding and clothing must be immediately burnt or boiled, and the tent fumigated with sulphurous acid."</p> <p>"The action of boiling water for ten minutes is believed to be quite sufficient to destroy any infectious matter adhering to clothes, &c., but care should be taken that the water is actually boiling, and whether boiling or burning be resolved on, no delay should occur."</p>	<p>"Too much importance cannot be attached to the duty of thoroughly disinfecting without delay, all discharges from the stomach and bowels of persons under the epidemic influence, as well as all bedding, clothing, towels and the like which such discharges may have imbued, and measures for keeping all privies and like places in a thoroughly clean and uninfected state become more and more important as the discharges in question are likely to have access to the places," pp. 232 and 233.</p>
<p>XVIII. "Attention should be paid, not only to the inmates of the affected barrack, but to the prisoners generally."</p> <p>"All the prisoners should be <i>individually</i> questioned twice daily, as to the condition of their bowels, and every man who has the slightest diarrhoea should have medicine administered at once on the spot. In a large jail this will require the co-operation of the lumberdars, or convict overseers, and they may also be entrusted with a few astringent pills for immediate use. The earlier the treatment, the more chance of success. During the night, enquiries as to the health of the inmates of each barrack should be made by the sentries every hour, and any man attacked by premonitory symptoms should be at once removed for treatment."</p>	<p>XVII. <i>Vide</i> last quotation and also extract opposite Rule XI.</p> <p>XVIII. "It is essential when cholera is epidemic, that arrangements should be made for affording medical relief without delay, to persons attacked even slightly with looseness of bowels," p. 235.</p> <p>"In places where cholera is present or threatening, one particular bodily ailment requires exceptional vigilance. That ailment is diarrhoea, * * * every looseness of bowels or sickness of stomach, ought as quickly as possible to be brought under skilled medical treatment," p. 232.</p>
<p>XIX. Not objected to.</p> <p>XX. "The drinking water, if possible, should be boiled and filtered."</p>	<p>XX. (Objected to chiefly on the ground that the Hindoos would not touch it, but the measure has been carried out in the Punjab, and it is recommended by Dr. Mouat, himself, in his Circular of 1855.)</p>
<p>XXI. "Fires of green wood should be burnt in all barracks and barrack yards."</p> <p>XXII. "So far as it conveniently can be arranged the prisoners should bathe outside the jail. Any water used for ablution within should be carried out and buried."</p>	<p>XXI & XXII. No corresponding orders or opinions in Mr. Simon's report.</p>
<p>XXIII—XXVII. Not objected to.</p> <p>XXVIII. "Any case occurring should be reported to the neighbouring jails, and to the nearest civil, military, and medical authorities, and a daily report should be sent to the head of the department of the progress of the disease, and of the measures taken to meet it."</p>	<p>XXVIII. <i>Vide</i> remarks opposite 1 and 2.</p>
<p>XXIX—XXXVII. Refer to moving into camp. The principle of the objections to the remaining rules and recommendations has been already discussed.</p>	

322. The objections urged by the Inspector General of Prisons against the introduction of these rules in his letter of the 3rd April 1867, are to the effect that they would "excite general alarm" (I and II), or involve a "violent supposition" (VI), or are "based upon an erroneous estimate of the contagious-

Agreement between the rules and those of the English authorities.

ness of cholera" (IX), or are "founded upon a want of acquaintance with the scientific researches formerly and recently conducted" (XI and XXXVI), or "not necessary for the protection of the other prisoners" (XII and XIII), or agreed to "with the omission of the disinfectants" as he believes "dry-earth to be the best of disinfectants, when properly applied (XIV, XV and XVI), or because they are "ridiculous and unnecessary" (XXI), or "impracticable and unnecessary" (XXII). It will be satisfactory for the Government to know that all the rules of the smallest consequence which were prepared by the Sanitary Commission, and which have been introduced into the jails of Upper India have their exact counterpart in similar directions or recommendations which have since been made by the Lords of the Privy Council or their medical adviser, and that the principle which guided the preparation of the one is exactly the same principle which has guided the preparation of the other. It is of the utmost importance, not only to the prisoners, but to the whole world, that in Lower Bengal, where cholera is said to have its home, no measure should be left untried which is in any degree calculated to arrest its progress or throw light upon the mode of its propagation. In the jails opportunities and facilities for the enquiry exist which can be found nowhere else, and the measures which have been recommended by the Medical Officer of the Privy Council and which are to all intents and purposes the same as those prepared by the Sanitary Commission, should have a fair and complete trial.

323. In spite of failures, the general results of moving European troops into camp, although far from satisfactory, yet admit of favorable comparison with those of former great epidemic visitations of cholera in which the plan was not generally adopted. It has been shown that the movement into camp has been attended in very many instances with great benefit, and, even where it has not produced such decided good as might have been anticipated, the sickness and mortality with the exceptions of Meerut and Peshawur, have been considerably less than in former years. It may be stated generally that movement into camp is the best means which is yet known for arresting the spread of cholera among European troops, and that this movement can be carried out in general with little if any addition to sickness from other diseases.

324. In General Orders by His Excellency the Commander-in-Chief some recent alterations and modifications have been made in the rules regarding cholera camps. G. O. C. C., dated 26th August 1867, directs "that all encamping grounds used as cholera camps be ploughed immediately after the troops have quitted them." A supplementary order of the 26th September enjoins that "the ground, especially latrine trenches and such like, within the limits of an encampment is not to be disturbed during occupation, but all refuse, &c., are to be buried at a distance of at least 500 yards. Cholera encampments after being ploughed up are not, except when unavoidable, to be re-occupied within twelve months." The circumstances under which the movement is to be made are modified in G. O. C. C., No. 159, dated 9th May 1868.

“ The following para. 481, of the ‘ measures for the prevention of cholera among European Troops,’ is re-published for general information :—

“ ‘ All therefore that need be laid down as an invariable rule is, that the particular body of men, among whom cholera has appeared in an epidemic form, must be removed from the cantonments. If for example, this body consist only of the inmates of some one building the measure need only be applied to them ; if some particular company or troop be attacked it will be similarly dealt with. A whole regiment or the whole of the troops at the station need only be sent into camp, when it is found that the measures already adopted have not stopped the progress of the disease, or there is reason to fear that they will be insufficient.’ ”

“ ‘ 2. With the sanction of Government, His Excellency the Commander-in-Chief begs General Officers and the Chief Administrative Medical Officers to adopt in practice the principle contained in the foregoing paragraph, and on no account during the hot and rainy seasons to vacate whole suites of barracks, because one or two or even more have been infected with cholera. It is necessary only to evacuate such buildings as have actually presented cases. During the hot and rainy seasons, if other buildings are available, they should be used in preference to placing the men in camp. In short, at such seasons of the year, the camp must be held to be the last resource. This is more especially necessary when the ground is either covered with water, or when it is drying up in the months of August and September.’ ”

325. It is worthy of consideration whether it would not be advisable to establish several permanent encamping grounds in the neighbourhood of all large stations occupied by European troops. They should be well drained, being raised above the surrounding level, if this is necessary to secure the important object, and they should be planted with trees. In many of the recent out-breaks it was found impossible to find proper encamping grounds, and movements which were desirable were rendered on this account impracticable.

326. In order to judge more clearly of the results of moving into camp, it is very important that the information regarding the progress of the disease should be much more detailed. It is impossible to draw any correct conclusions if all the men are entered in one return. Each detachment should be treated as a distinct body, and particulars regarding it should be separately stated—how many cases of cholera occurred in the barracks or buildings occupied by the particular party before its removal, and how many after it went into camp. Wherever such a course can be avoided, fresh detachments should not be sent to join any already in camp as was done in the case of the 42nd regiment at Peshawur.

327. The movement of European troops under canvass in the hot and rainy seasons requires considerable tact and care. The necessity of pitching a preliminary camp on the first appearance of any danger has been much insisted on by Doctor Murray, Inspector General of Hospitals, who has

very great practical experience in conducting such movements, and there can be no question that this early precaution is of the greatest importance. It saves time and prevents hurry and confusion. The march should be short so as not to tire the men. As a rule it should be made in the early morning, but it should be borne in mind that time is valuable and that the sooner the body of men which has been attacked is removed from the infected locality, the greater are the hopes of speedily shaking off the disease.

328. There are two terms in common use with regard to cholera which are open to serious objection. The term "sporadic" is applied in contradistinction to "epidemic."
The terms "sporadic" and "choleraic diarrhoea," objectionable. There is no difference between the symptoms of a so-called "sporadic" case and one which commences an epidemic, while the use of the term is calculated to do harm by allaying alarm and so preventing proper precautions. The term "choleraic diarrhoea" although it may be correct has in practice led to much abuse. If the present state of scientific knowledge with regard to cholera be accepted, choleraic diarrhoea is as truly cholera as the most virulent form of the disease, inasmuch as it appears as capable of spreading the poison and is therefore as dangerous to the community among which it occurs. The addition of the word "diarrhoea" is very apt to conceal this danger, and, where the question of going into camp has to be decided by the number of cases which indicate the presence of a specific disease, it is of the utmost importance that the whole truth should be faced and acted on. In one return which reached this office the ratio of deaths from "choleraic diarrhoea" was really greater than it was from cholera. Diarrhoea attended with the characteristic rice water evacuations should for all practical purposes be considered as cholera.

329. In answer to a reference from the Government the following measures for the purification of barracks were recommended. "Every hut or building in which a case of the disease occurs, or which there is reason to suspect has been contaminated by cholera discharges, should at once be fumigated with sulphurous acid (the fumes of burning sulphur); the floor to the depth of six inches should be dug up, the old earth buried and fresh earth placed on it, the inside should be washed over with a solution of McDougall's powder or other disinfectant and the walls smeared with fresh mud. The last named process will be more efficacious and at the same time more economical than whitewashing. Where the floor is not earthen, but of brick or other permanent construction, it should not be dug up but washed with some disinfectant in the same manner as the ceiling." These recommendations were intended specially to apply to huts and buildings occupied by Native Troops, but the principle is equally applicable to barracks occupied by European Troops. The walls in this case should be washed with warm quick-lime water. In every station there should be an ample supply of disinfectants.

330. There is one subject of very great practical importance which has not been adverted to, and that is the period of incubation which the disease generally assumes.
2. W.L. The period of incubation. 30. 19th M.

On this point numerous replies have been received, but the information is generally wanting in precision. In some cases the poison would appear to have been dormant for many days; in others it would seem to have borne fruit within a few hours. The subject is one of great interest, and its solution is intimately connected with proper preventive measures, but for the present it appears better to await further and more specific data than to draw conclusions without adequate grounds.

331. It may not be out of place to note as the result of the experience of the past, what points specially demand attention in any future epidemic. In all epidemics, not only of cholera but of any communicable disease, it is very important to trace the *first* case and to leave no means untried to discover its source. Once the disease has spread, the enquiry becomes much more difficult. If associated with pilgrims returning to their homes the following points should be kept in view :—

- 1st.—How many pilgrims are supposed to have gone from each district to the fair ?
- 2nd.—When did the first of them return ?
- 3rd.—Was there any cholera in their company on their way back ?
- 4th.—If so, when did the last case occur ?
- 5th.—When did the first case occur among the residents who had not been to the fair ?
- 6th.—Can any communication be traced between this case and new arrivals ?

332. In conclusion it only remains to acknowledge the very valuable assistance which many officers have furnished in the preparation of this report. To the Heads of the Medical Department, both British and Indian, to their Secretaries, to Dr. John Murray, Inspector General of Hospitals in the Upper Provinces, to Dr. Bryden, Statistical Officer, and to the Civil Surgeons generally throughout the country such acknowledgments are particularly due. Dr. Lees who officiated as Secretary during a few months in the beginning of the year has also aided in collecting data and in abstracting reports regarding the history of the disease among the European Troops at different stations.

PART II.

EUROPEAN TROOPS.

333. The average strength of the British Troops in the Bengal Presidency, during the year 1867, has been taken by Dr. Bryden for the purposes of vital statistics as 34,603. As explained in his foot note at the commencement of the European tables of the year, this was not the actual average; during the months of November and December, upwards of 6,000 men were withdrawn and they had not been replaced up to the close of the year. In calculating the admission and death rates therefore he has thought it more correct to found them on the average strength of only 10 months. Taking this as the basis of the ratios given, it appears that during the year 1867, the average number daily under treatment was 1,803, the daily proportion per 1,000 having been 53. This ratio fluctuated between a minimum of 46·7 in December, and a maximum of 61·8 in September. The total admissions into hospital amounted to 48,876 or a ratio of 1,412 per 1,000. In October the rate of admissions was at its maximum or 169 per 1,000; in February at its minimum of 86 per 1,000. Comparing these results with those of the previous eight years as shewn in last Annual Report it appears that they are more favorable than those of any one of them. From 1859 to 1867 the average number out of every 1,000 British Soldiers who were sick daily had fallen from 90 to 58. In 1867, it has been only 53. In the same way the number admitted per 1,000 had fallen gradually and steadily from 2,228 to 1,501. In 1867 it has been only 1,412. Taken merely with reference to the amount of sickness, the returns of the past year are very favorable and satisfactory.

334. But viewed in relation to mortality the result is very different. It was shewn in last report that during 1866 the death rate among European Troops in this Presidency had been only 20·11 per 1,000—the most favorable ratio that had yet been attained. Between 1859 and 1866 it had varied from 45·93 in 1861 to 20·11 in 1866. In 1867 the deaths have been in the proportion of 30·95 per 1,000—a loss of life greater than what has occurred in any year since 1861. This high death rate has been due, just as it was in the year last mentioned, to a wide spread and virulent epidemic of cholera over northern India.

335. The history of this outbreak is of so much importance that it has been made the subject of a special narrative and forms the first part of the Annual Sanitary Report for 1867. The circumstances of the epidemic as they affected the European Troops, the Native Army, the Prisoners, and the general population are there considered as a whole; all the information calculated to throw any light on the manner in which the disease was spread has been detailed, and an attempt has been made, so far as data are available, to compare the cause and results of the disease with those observed in the great epidemics which have proved so fatal in former years.

336. Out of the 1,071 deaths which occurred during the year, 479 were due to cholera—or out of the total death rate of 30·95 per 1,000 13·84 was due to this cause. In 1866 the death rate from this disease was only 1·37; on the other hand in 1861 the deaths were 23·73, and in the epidemic of 1856, which attracted comparatively little attention, cholera was fatal to no less than 33·05 per 1,000 of the European Garrison of Bengal. Such fluctuations as these defy all previous calculation. It is not necessary to recapitulate facts which are so fully detailed elsewhere, but it is to be observed that the very high death rate caused by cholera has not only immensely raised the mortality of the year, but has also to a great extent modified the whole results.

337. To what extent and in what manner this has been done it is impossible to point out with any precision. It may be said that had there been no cholera, the death-rate instead of 30·95 per 1,000 would have been only 17·11; but what the death-rate would have been had there been no cholera epidemic, it is impossible to state with perfect accuracy, since some at least of those who fell victims to the pestilence must have died of other diseases. The admission-rate is not much affected by the cholera, nor is the ratio of daily sick much influenced by the prevalence of a disease which, as a rule, is so rapid in its course. In considering the general statistics of the extent and fatality of all other diseases in 1867 compared with the particulars regarding them in former years, it must be remembered that the results have in a great measure been modified, and a perfectly fair comparison rendered impossible by the occurrence of the great epidemic of cholera.

Chief causes of mortality in 1867.

338. Taken in the order in which they have contributed to the mortality, the chief diseases are thus arranged :—

Cholera	...	...	...	...	13·84	per 1,000
Fevers	...	...	...	...	2·63	„
Hepatitis	...	...	...	...	2·57	„
Apoplexy	...	...	...	...	2·40	„
Dysentery	...	...	...	...	1·97	„
Phthisis	...	...	...	...	1·36	„
Heart disease	...	...	...	...	1·16	„
Respiratory diseases	...	...	...	...	·84	„
Delirium Tremens	...	...	...	...	·40	„
Diarrhœa	...	...	...	...	·40	„
Wounds and accidents	...	...	...	...	·29	„
Atrophy and Anæmia	...	...	...	...	·17	„
Dropsy	...	...	...	...	·14	„
Smallpox	...	...	...	...	·12	„
Scurvy	...	...	...	...	·03	„
All other diseases	...	...	...	...	1·62	„
Died out of Hospital	...	...	...	...	1·01	„
Total					30·95	

Before proceeding to compare these figures with those for previous years, the results of the year 1867 as regards the several groups into which the European Army has been divided by Dr. Bryden, as shewn in his Tables II.—VI will be examined.

339. In Bengal Proper out of an average strength of 1,600 men there have been 107 daily in hospital throughout the year, or a proportion of 66·9 per 1,000. This is somewhat in excess of the ratio for 1866, which was 57·4, and is also above that for the whole army in 1867. The total admissions have been 2,684, or, at the rate of 1,677 per 1,000. In 1866 the ratio was 1,812. It is to be observed, moreover, that the greatest number of admissions was due to venereal disease. Three hundred and ninety-three soldiers were treated for this affection, or a proportion of 245 per 1,000. Intermittent fever, the next most prevalent disease, caused an admission-rate of 236 per 1,000, and diarrhœa, 125. The admissions from other causes were not individually numerous. The maximum number under treatment daily was 89·8 per 1,000 in August, and the minimum 50·8 in December. In this month also, the admissions into hospital were lowest, or 107 per 1,000; in July they were highest, or 197 per 1,000. In this group 23 deaths occurred during the year, or a mortality of 14·38 per 1,000. In 1863, the death-rate was 20·6. Excepting this year, it has between the years 1859 and 1866, varied from 21·9 to 50·9. The results of 1867 are therefore particularly favorable. The diseases which have chiefly contributed to the mortality in the past year have been hepatitis, cholera, and dysentery. From other diseases the deaths have been not more than one from each, or a ratio of little over one-half per 1,000. From cholera there have been only 4 casualties out of 5 cases—a remarkable contrast to the wide spread and virulent nature of the disease in the upper provinces.

340. The sickness and mortality in the second group of stations embracing the Dinapore, Benares, Oude and Cawnpore Districts are shewn in Table III. Here out of an average strength of 9,580 British soldiers, there were 476 sick daily or a ratio of 49 per 1,000. In 1866, the rate was 62. In September, the proportion daily in hospital attained its maximum of 59, and in June, its minimum of 46 per 1,000. During the year, there were 11,105 admissions or a proportion of 1,159 per 1,000. In 1866, the proportion was 1,407. The greatest number of admissions took place in October, when 1,268 came under treatment, and the smallest number in December, when it was only 687. In this group also venereal diseases stand highest as the cause of sickness. Out of every 1,000 of average strength, 194 were treated for these affections. Intermittent fever comes next with a ratio of 168 per 1,000. Of other diseases taken separately, comparatively few cases occurred. Out of this group 164 soldiers died, or a ratio of 17·12 per 1,000. Although not all included within the area of the cholera epidemic several of the stations embraced in it were attacked. In particular Allahabad suffered, and there were also a few cases at Cawnpore, Seetapore, Lucknow and Fyzabad. Altogether 55 admissions took place from the disease, and of these 36 were fatal. The ratio of mortality caused by cholera

was 3.76 per 1,000. Next to cholera, stands hepatitis with a death-rate of 2.92, then fevers 1.57, dysentery 1.25, heart disease and phthisis, each 1.15. The total death-rate has been more favorable than in 1866, when it amounted to 22.54 per 1,000. In 1862 it was only 13.9.

341. Within the third group are embraced the stations of Meerut and Shajehanpore, both of which suffered severely from the cholera epidemic. At the former, the Buffs were more than decimated by the disease. The results in this group for 1867 are thus very unfavorable. Out of an average strength of 4,747 there were no less than 231 deaths, or a mortality of 48.66 per 1,000. As has been already remarked the occurrence of such a wide spread and virulent epidemic altogether deranges the vital statistics of the year, and renders all fair comparison with the results of previous years, which were free from the disease, impossible. The deaths from cholera alone in this group were 29.49 per 1,000, or nearly double what the mortality from all causes had been in the year previous. Fevers, dysentery, and hepatitis have also been more fatal than they were in 1866. Such a result may naturally be ascribed to the exposure of great part of the troops in cholera camps at a very trying season of the year, but a more extended comparison, including a series of years in which no such special influence was at work, shows that such a conclusion is not warranted. In the following Statement the deaths from the chief forms of disease in this group are shown between 1859 and 1867.

Died per 1,000 of average strength.	1859.	1860.	1861.	1862.	1863.	1864.	1865.	1866.	1867.
Cholera ...	.25	4.36	21.52	5.14	None.	.16	.78	None.	29.49
Fevers ...	3.84	3.91	5.97	3.23	1.73	2.53	3.13	1.64	3.58
Dysentery ...	5.50	2.56	4.16	3.09	3.45	1.35	1.56	.82	3.58
Diarrhoea ...	1.29	1.20	2.77	.74	1.41	.67	.19	None.	None.
Hepatitis ...	4.22	4.36	2.77	3.82	3.77	4.03	2.55	2.45	1.47
Heat Apoplexy ...	3.71	1.20	1.53	.88	1.57	1.34	3.71	1.42	1.90

It will be seen that fevers were very little more fatal in 1867 than they had been in 1865, that hepatitis was very much less fatal, and that apoplexy, the disease which of all others seems most directly due to exposure, was very much less fatal in 1867 than it was in 1865.

The chief cause of admissions into hospital in this group was fever, causing a ratio of 322 cases per 1,000. Venereal diseases occupy the second place, the admission-rate having been 193 per 1,000. Diarrhoea has been prevalent as is usual in cholera times, and rheumatism has also been very common.* Cholera which added so markedly to the death-rate affects the total admissions of 1,417 per 1,000 to the extent of only 33. The daily sick have averaged 64 per 1,000, the ratio having been 76 in September and 49 in Decem-

* See note to Table XVI-2.

ber. The greatest number of admissions, 174 per 1,000, occurred in September, and the lowest, 87 per 1,000 in December. In 1866 the average daily number of sick was little under what it has been in 1867, having reached 60 per 1,000. The admissions in that year were 1,278 per 1,000.

342. The Agra and Central India Districts almost entirely escaped the epidemic cholera. Out of a strength of 4,246 men 269 were in hospital daily, or a ratio of 63 per 1,000 for the year. During the different months the proportion of sick fluctuated considerably. In September it was at its maximum of 77. Among the causes of admissions fevers strikingly predominate. Including the intermittent, remittent, and continued forms of the disease no less than 3,555 cases were treated, or a proportion of 837 per 1,000. As will be seen on reference to Table IX, the stations of Jhansie, Jubbulpore and Saugor have mainly contributed to this result. Venereal diseases were the next most prevalent form of sickness, the admissions having reached 200 per 1,000. The admissions altogether have been in the ratio of 1854 per 1,000, the maximum of 235 having occurred in October, and the minimum of 105 in March. In 1866 the admissions in this group were in the proportion of 1,992 per 1,000. In that year the death-rate was 24.11; in 1867 it has been very much the same, or 24.73. Apoplexy has been unusually fatal, having caused 18 deaths or 4.24 per 1,000. Of these 12 occurred at Morar, and appear to have been due to exposure in moving into camp on account of cholera. Next in fatality has been cholera, to which 14 casualties were due, or a ratio of 3.30 per 1,000. Next in order is hepatitis with a ratio of 3.06, and then dysentery, 2.12. To the other diseases specified no unusual mortality has been due.

343. In many of the stations of the Punjab, cholera was very rife, and the result has been a death-rate far in excess of the average. Between 1859 and 1866, the mortality per 1,000 has fluctuated from 14.41 in 1866 to 51.4 in 1861. In the latter year cholera was spread over the whole of the Lower Punjab, and caused 574 casualties among European soldiers. In 1867, the disease extended over the whole province, and the total death-rate has been 37.14. Out of an average of 13,570 men, 504 have died, and of these 283 fell victims to cholera. The mortality from that disease alone has been 20.86. Apoplexy caused 44 deaths, or 3.24 per 1,000. Of these, 14 occurred at Mean Meer. Fevers caused a death-rate of 2.87, and hepatitis of 1.92 per 1,000. Fevers, dysentery diarrhoea, hepatitis and apoplexy are the five diseases which are apt to prevail among troops on any unusual exposure. The death rates from each of them in the Punjab during the last nine years have been as follow :—

Died per 1,000 of average strength.	1859.	1860.	1861.	1862.	1863.	1864.	1865.	1866.	1867.
Fevers ...	3.68	3.23	2.20	3.01	3.45	1.89	2.67	1.97	2.87
Apoplexy ...	4.00	.97	1.45	1.10	1.28	.95	2.23	1.21	3.24
Dysentery ...	2.93	2.56	2.20	2.38	3.19	1.32	1.75	1.06	1.70
Diarrhoea ...	.81	.25	1.01	1.00	.89	.50	.14	.53	.52
Hepatitis ...	2.87	2.01	2.55	2.45	2.74	2.58	3.46	1.90	1.92

Of fevers, bowel complaints, and hepatitis, there has been no unusual prevalence, and from apoplexy the deaths are only one per 1,000 more than they were in 1865. Even if it be admitted that this increase is really a necessary consequence of moving into camp, such a trifling additional mortality can hardly be accepted as a weighty reason against the movement, provided that its advantages in checking the spread of cholera are beyond all doubt established.

344. The chief causes of sickness in the different groups have already been alluded to with reference to the general results

Chief causes of sickness in different groups.

in each. It will be instructive to compare the admissions among all together, and state at the

same time the relation which the results bear to those of the year previous.—

Statement shewing the admissions per 1,000 of average strength from the chief diseases in the different groups.

YEARS.	Cholera.	Small Pox.	Fevers.	Apoplexy.	Delirium Tremens.	Dysentery.	Diarrhoea.	Hepatitis.	Spleen disease.	Respiratory diseases.	Phthisis Pulmonalis.	Scurvy.	Rheumatism.	Venereal diseases.	Eye diseases.	Abscess and ulcer.	Wounds and accidents.	All other causes.	TOTAL.
BENGAL PROPER.																			
1866 ...	3	0	662	4	5	104	143	81	5	54	9	0.5	77	230	22	80	91	227	1,812
1867 ...	3	0	341	2.5	11	71	125	76	10	76	9	0.6	79	245	16	114	139	348	1,677
DINAPORE, BENARES, OUDE, AND CAWNPORE.																			
1866 ...	5	1	308	3	4	52	81	61	6	63	9	1	74	306	44	99	88	194	1,407
1867 ...	6	1	250	2	3	39	71	53	4	47	9	0	64	194	32	93	86	190	1,169
MEERUT AND ROHILKHAND DISTRICTS.																			
1866 ...	1	1	241	4	4	33	69	62	5	80	8	1	81	215	25	112	99	232	1,278
1867 ...	33	2	324	2	4	39	103	60	7	75	12	2.1	123	193	50	90	82	211	1,417
AGRA AND CENTRAL INDIA.																			
1866 ...	0.2	0	977	3	6	41	131	51	6	84	6	1	90	209	33	101	104	237	1,992
1867 ...	5	0	837	15	7	32	93	52	9	75	9	1	69	200	85	98	101	216	1,954
PUNJAB.																			
1866 ...	0	0.6	517	3	3	18	75	56	7	94	7	3	81	150	26	99	105	184	1,435
1867 ...	35	0.7	566	8	3	29	103	45	7	69	7	1	68	111	28	71	97	154	1,406

In the first group, fevers have been little more than half as prevalent during 1867 as they were in 1866; dysentery and diarrhoea have also been considerably less. Respiratory diseases have somewhat increased. The admissions from venereal diseases instead of diminishing have risen to the extent of 15 per 1,000. In the second group, the chief points deserving attention are a decrease in bowel complaints and respiratory diseases, and a very marked decrease in venereal disease, the admissions having fallen from 306 to 194 per 1,000. In the third group the most prominent feature is the great prevalence of cholera, an increase in fevers and bowel complaints. In

venereal affections, the reduction has been trifling. In the Agra and Central India Districts, excepting an increased prevalence of cholera, there is no very marked difference between the results of the two years. The admissions from venereal disease have not yet been affected to any sensible extent. In the Punjab again the admission of 35 per 1,000 from cholera affords a marked contrast to the total absence of the disease in 1866. Venereal disease has caused 111 admissions per 1,000 compared with 150 in the year previous. The general results of the two years as regards total admissions do not materially differ.

345. A similar form of statement will conveniently shew the proportion in which the chief diseases have contributed to the mortality in each group, and also admit of comparison between the results of 1867 and the year immediately preceding:—

Chief causes of mortality in different groups.

Statement shewing the deaths per 1,000 of average strength from the chief diseases in the different groups.

YEARS.	Cholera.	Smallpox.	Fevers.	Apoplexy.	Delirium Tremens.	Dysentery.	Diarrhea.	Hepatitis.	Spleen disease.	Respiratory diseases.	Heart diseases.	Phthisis Pulmonalis.	Dropsy.	Scurvy.	Atrophy and Anæmia.	Wounds and accidents.	All other diseases.	Died out of Hospital.	TOTAL.
BENGAL PROPER.																			
1866 ...	1.93	0	3.37	2.41	0	3.38	.96	3.86	0	3.37	.49	2.41	0	0	0	.96	4.92	.96	28.93
1867 ...	2.50	0	0	.62	.62	1.87	.62	5.00	0	.63	0	0	.63	0	.63	.63	.63	0	11.38
DINAPORE, BENARES, OUDE, AND CAWNPORE.																			
1866 ...	2.89	.11	3.99	1.40	.33	2.36	.43	3.33	0	.32	1.20	1.07	0	.22	.32	0	2.89	1.61	22.54
1867 ...	3.76	.31	1.57	.94	.52	1.25	.21	2.92	0	.21	1.15	1.15	0	.10	.10	.42	1.47	1.04	17.12
MEERUT AND ROHILKHAND.																			
1866 ...	0	.20	1.64	1.42	.41	.82	0	2.45	0	1.22	.82	2.24	0	0	0	.41	1.63	1.22	15.30
1867 ...	29.49	0	3.58	1.90	.63	3.58	0	1.47	0	1.26	1.48	1.48	.12	0	.21	0	2.11	1.06	48.66
AGRA AND CENTRAL INDIA.																			
1866 ...	.23	0	6.95	2.55	.70	1.39	.23	3.71	0	1.62	.70	1.16	.23	0	0	.93	1.16	2.55	24.11
1867 ...	3.30	0	3.06	4.24	.94	2.12	.71	3.06	0	.47	1.18	1.41	.24	0	0	0	1.88	2.12	24.73
PUNJAB.																			
1866 ...	0	.15	1.97	1.21	.38	1.06	.53	1.90	0	1.21	.61	1.29	.08	.08	.30	.38	1.50	1.67	14.41
1867 ...	20.86	.07	2.87	3.24	.07	1.70	.52	1.02	0	.89	1.13	1.25	0	0	.07	.37	1.39	.74	37.14

In the first two groups the mortality during 1867 was much less than it had been in 1866. In Bengal proper there were no deaths from fevers, which had in the year previous caused a loss of 3.37 per 1,000. From apoplexy, dysentery and respiratory diseases the mortality was also less. From cholera and hepatitis on the other hand the proportion of casualties was higher. In the second group notwithstanding a slight increase in deaths from cholera, the mortality was 17.12 compared with 22.54 in 1866. A smaller number of deaths from fevers, apoplexy, bowel complaints, and hepatitis chiefly contributed to this result. In the third group, on the

other hand, owing to the cholera epidemic the death rate rose to more than three times what it had been in 1866. There was also a slight increase in the mortality from fevers and dysentery. In Agra and Central India the results of the two years do not vary one per 1,000. Cholera was more fatal to the extent of three per 1,000, but a proportionate diminution occurred in the deaths from fevers. In the Punjab the death rate has been more than doubled, owing almost entirely to cholera.

346. All the particulars regarding cholera in 1867 have been so fully

Small pox in 1867.

detailed in the special report on that disease that they need not be further alluded to. The extent to which the other chief diseases have prevailed and proved fatal may now be considered specially in relation to their comparative extent and fatality in former years. They may be conveniently taken in the order in which they appear in Dr. Bryden's tables, and in them small-pox comes after cholera. In 1867 there have been 29 cases of the disease and 4 deaths, a result almost exactly the same as that in the year previous when there were 26 cases and 4 deaths. The distribution of small pox according to months and also according to the stations in which it appeared is shewn in Table X. It will be observed that no cases occurred either in Bengal proper, or in the group of stations comprising Agra and Central India. At Bareilly, Meerut, and Peshawur five cases occurred in each. At Sealkote there were four. The remainder were distributed by ones and twos at each place. As has been so frequently remarked the disease was at its height in March and April, and in September had altogether disappeared. There were also no admissions in either August or October.

347. Among Native Troops during 1867, the admissions from small-pox were comparatively more numerous and more fatal.

Small pox among European and Native Troops compared.

Even among them the disease was not prevalent. Out of an average strength of 39,114 there were thirty-five cases and of these six died. The ratio of admissions per 1,000 was 0·9 compared with 0·8 among Europeans. The deaths per 1,000 were ·15 in the one and ·12 in the other. The proportion of deaths to cases treated was 13·80 per cent. among European, and 17·14 among Native Soldiers. It would add interest to these returns if particulars were invariably given regarding the extent and form of protection enjoyed by those who were attacked, whether they bore marks of successful vaccination, of inoculation, or of previous small pox. An annual resume, of the results would afford valuable statistics regarding the protective power conferred by each, and would show how far the appearance of the disease had been due to preventible causes.

348. From the three varieties of fever, intermittent, remittent, and continued, there have been in all 16,113 admissions

Fevers in 1866.

into hospital. Of intermittent the cases equalled 364, of remittent 23, and of continued fever 78, or a total of 465 per 1,000. In 1866 the number was very nearly the same, having been 467. A great disparity exists as regards the prevalence of the disease in the different parts of the country. In Bengal proper the admissions were only 340 per 1,000. In the second group they were still fewer having equalled only 259. In the

Meerut and Rohilkund Districts they were 322. In Agra and Central India the admission rate from this class of diseases was very high, having been 836 per 1,000. In the Punjab 565. During the year, ninety-one soldiers died of fevers, twenty-five of these casualties having been from the intermittent, twenty-five from the remittent, and forty-one from the continued form, a mortality equivalent to 2·63 per 1,000 of average strength. None of these fatal cases occurred in Bengal proper; fifteen took place in the second group, seventeen in the third, thirteen in the fourth, and thirty-nine in the Punjab. The remaining 7 deaths are shown in Table XII. In Bengal the disease was most prevalent in July, and least prevalent in November. The admissions in the former month were 120 and in the latter only 10. In the second group the maximum of 408 was attained in October and the minimum of 75 in February. In the third group the admissions from fevers which were 234 in October were only 61 in December. In Agra and Central India 637 men were admitted from this class of diseases in October and only 108 in March. In the Punjab the cases fluctuated between 1,523 in October and 221 in March.

349. During 1867 fevers have been both more prevalent and more fatal among Native than among European Troops. The admissions over the whole Presidency have been 744 among the former, and 465 among the latter. In the first group the results were respectively 611 and 310. In the second 553 and 259. In the third 436 and 332. In the fourth 782 and 836, and in the Punjab 1,030 compared with 565. In all the groups excepting that which includes Agra and Central India the Native Troops have suffered from fevers to a much greater extent than the Europeans. In the first group the comparison in respect to this and indeed any climatic disease cannot be fairly made, as the stations occupied by Native Troops differ considerably from those in which the British Soldiers are quartered, and the malarious regions of Assam and Cachar, for example, add largely to the admission rate. In the other groups, however, this disturbing element exists to a very trifling extent. The proportion of fatal cases has also been larger among the Native Soldiers, the loss per 1,000 from fevers having been among them 3·04 while among Europeans it was 2·63.

350. Among British Soldiers 83 died of apoplexy during the year or a ratio of 2·40 per 1,000. Of this disease 202 cases were treated or an admission rate of 5·8 per 1,000. The ratio of cases during the last nine years has fluctuated between 8·7 in 1859 and 1·8 in 1862, and the deaths between 4·10 in 1859, and 1·09 in 1863. Apoplexy although both prevalent and fatal during the past year has contributed to the mortality in smaller proportion than it did in either 1859, 1860 or 1865. Of the 83 casualties from this disease 47 or more than one-half occurred in the month of July, and 12 in September. Looking at the results in the different groups it appears that the fatality from this disease occurred chiefly in Central India and the Punjab. In the former the ratio of deaths amounted to 4·24, and in the latter to 3·24 per 1,000. The occurrence of these cases in connection with the formation of cholera encampments has been already alluded to. Among Native Troops there were only nine deaths from the disease or a ratio of ·23 per 1,000.

351. Of dysentery and diarrhoea 4,527 cases have been treated, the admissions from the former disease having equalled 36 and from the latter 93 per 1,000. The two together reached their maximum of 735 in August, and their minimum of 188 in January. From dysentery the death rate was 1·97 and from diarrhoea 40 per 1,000. The admission rate of 129 per 1,000 from the two diseases taken together is exactly the same as it was in 1866. The death rate of 2·17 from bowel complaints in that year was the most favorable which had been attained. During 1867 the mortality from those complaints has been a little higher or 2·37. Taking the groups separately it appears that the admissions from dysentery have been lowest in the Punjab where they have amounted to only 29 per 1,000. In Bengal proper they attained a maximum of 71 per 1,000; diarrhoea fluctuated between 71 in the second group and 125 in the first.

352. From dysentery and diarrhoea 140 per 1,000 of Native Soldiers were admitted into hospital; the mortality being 1·77. Bowel complaints among European and Native Troops. These diseases have thus been more prevalent among Native than among European Soldiers, but they have at the same time been less fatal. Among Europeans 5·77 per cent. of those treated died, while among Natives the loss was only 1·25. The Native Troops quartered in Bengal Proper have suffered more severely from this class of disease than those in any other part of the country. The admission rate here has been so high as 260 per 1,000, and the deaths 3·1.

353. In last Annual Report it was shewn that the ratio of deaths among cases of dysentery had of late years been very materially reduced; that from having been 8·60 per cent. in 1859 it had gradually and almost without any check fallen to 4·19 in 1866. In 1867 the result has not been so favorable, for out of every hundred cases of dysentery treated 5·33 died. From 1852-53 to 1858 the deaths from dysentery were in the following proportions per cent. of those treated:—

1852-53	...	...	...	...	10·80
1853-54	..	...	...	...	11·81
1854-55	...	...	...	...	15·84
1855-56	...	...	...	...	8·47
1856-57	..	...	...	...	10·53
1858	...	...	...	...	13·39

Compared with the fatality of these years the proportion of recoveries in the past year is satisfactory, but the percentage of deaths to treated has been somewhat higher than in either 1864 or 1866.

354. The admissions from hepatitis shew a decrease of 8 per 1,000 compared with the ratio of 1866. In that year they equalled 60 per 1,000. In 1867 they have been 52—the lowest ratio attained during any of the last nine years, but the fluctuation has been slight compared with that attendant on other diseases, having varied

only between 52 and 67. The death rate from hepatic disease during 1867 (2·57) has also been lower than in any of these years. Hepatic affections have given their maximum of admissions in Bengal proper, where they amounted to 76 per 1,000, and also their maximum mortality of 5·00.

355. As usual, the Native Troops have suffered from hepatic disease to a very much less extent than European Soldiers. **Hepatitis among European and Native Soldiers.** The admission rate has been less than two per 1,000, and the death rate less than one quarter per 1,000. In many diseases the balance is in favor of Native Soldiers; but in none is this more uniformly striking than in diseases of the liver. To this result their temperate habits doubtless in a large degree contribute.

356. One hundred and forty-four cases of delirium tremens have been treated during 1867, or a ratio of 4·2 per 1,000. **Delirium Tremens in 1867.** This is very nearly the same proportion as there was in 1866. The death rate has been ·40, or slightly more unfavorable than it was in the previous year when it was ·37. It will be seen in a succeeding paragraph that the disease has been much more fatal among married than among unmarried soldiers, the ratio among the latter having been only ·32, while among the former it was 1·33.

357. The introduction of a series of rules for the prevention of venereal disease was noted as one of the chief sanitary features of the year 1866. These rules have now been in force for some time in all the Military Cantonments of this Presidency and have been carried out with varying degrees of care and success. Special reports have been applied for, but from most of the stations it appears that no records of this nature have been received. **Rules for the prevention of Venereal disease.** The Medical Officers in charge of the lock hospitals at Roorkee, Meerut, Lucknow, Allahabad, Cawnpore, and Hazareebaugh have alone supplied an account of the working of the institutions under their charge during the year. It is very desirable that an Annual Report should be required from every lock hospital throughout the Presidency. A short concise statement of the difficulties which have been met with, of the measures adopted to overcome them, of the success which has attended these efforts, and of the chief features in the general and financial management of the hospital and its inmates, would afford very valuable information. In a matter which requires so much judgment, tact and delicacy, it is very important that the benefits of experience should be made generally available, and that the success or failure in any particular station should not be lost sight of in guiding future efforts.

358. The special reports which have been received are generally favorable. At Roorkee under Dr. J. P. Walker's **Special Report received.** careful management very decided success has been attained. In the Wing of the 79th Regiment quartered at that station the number of cases was exceedingly few and the form of attacks mild. Dr. Walker has made some excellent suggestions for improving the present system of supervision, and for applying it to troops on the mar

At Lucknow also very remarkable success has attended the institution of a lock hospital. Dr. Cannon remarks that whereas in 1866 the admissions were at the annual rate of 252 per 1,000 men, in 1867 they had gone down to 180 per 1,000, and during the last six months of 1867 the rate had fallen to 62 per 1,000. The Allahabad and Cawnpore reports do not call for any special remarks. In both stations there has been an improvement in the returns of disease among the European Soldiers, but a more strict application of the rules appears to be required. At Meerut the results have been extremely favorable. In the Royal Artillery the admissions during the first half of 1867 were at the rate of 26.9 per 1,000 compared with 61.0 during the first half of 1866. In Her Majesty's 19th Hussars the ratio of admissions during the last nine months of 1867 was reduced to less than one half of what it had been during the corresponding portion of 1866. The return for the whole Garrison of Meerut during the past year is favorable. In the Hazareebaugh report no statistics are given to shew the beneficial effects of the institution, but the results of the year show a decided improvement on those of 1866.

359. The statistics of venereal disease in the different stations form the best index of the manner in which the management of the lock hospitals has been conducted. Venereal disease at different stations 1859-1868. In the following statement the results at the chief of those occupied by European Troops during the past nine years are compared. Some have been omitted, because the occupation in several of these years has been broken by an interruption of a few months in each, and any comparison is thereby apt to be inaccurate. For the same reason the returns of individual years, in the case of several of the stations entered in the table, have not been given. It may be observed that in many of the stations, such as Dhapore, Fyzabad, Lucknow, Seetapore, Meerut, Delhi, Morar, Umballah, Ferozepore and others, the diminution in the ratio of admissions has been very marked, the proportion per 1,000 having fallen very much below what it had been in any of the preceding eight years. In other stations again there has been little change, and the statistics conclusively show that in them the rules for the prevention of venereal disease have not been in successful operation.

Statement shewing the ratio of admissions from venereal disease per 1,000 of average strength of European Troops occupying the undermentioned stations in the Bengal Presidency, during the past nine years, 1859 to 1867.

STATIONS.	1859.	1860.	1861.	1862.	1863.	1864.	1865.	1866.	1867.	
Fort William ...	337	456	392	353	281	417	314	232	335	
Dum-Dum ...	260	...	311	...	...	141	...	270	...	
Barrackpore ...	218	347	236	...	193	197	369	200	165	
Berhampore ...	128	122	47	77	85	...	333	99	...	
Hazareebaugh ...	681	560	634	137	309	...	...	291	...	
Dinapore ...	604	551	528	513	502	363	303	466	263	
Benares ...	458	619	597	307	229	336	495	497	410	
Fyzabad ...	160	402	465	268	269	253	304	339	164	
Roy Barcilly ...	327	181	260	306	...	...	199	214	...	
Lucknow ...	510	405	267	410	301	208	188	252	181	
Seetapore ...	338	324	426	297	295	232	408	480	167*	* 10 Months.
Allahabad ...	162	321	396	355	426	256	229	236	223	
Cawnpore ...	511	558	518	411	362	290	289	...	193	
Shajehanpore ...	299	317	...	320	358	269	512	343	288*	
Barcilly ...	387	212	510	250	327	232	162	...	175	
Moradabad ...	227	501	...	427	338	445	209	...	200*	
Meerut ...	318	214	514	463	385	338	260	172	74	
Delhi ...	539	413	656	377	294	379	345	355	165	
Muttra ...	303	240	189	354	...	...	177	...	186*	
Agra ...	376	382	137	212	191	164	179	284	317	
Morar ...	254	220	301	173	251	190	278	236	157	
Umballah ...	311	256	495	309	225	182	165	161	111*	
Ferozepore ...	285	210	463	333	...	185	118	316	95*	
Meean Meer ...	404	358	238	215	...	244	107	150	130	
Umritsur ...	218	161	217	227	171	263	...	190	195	
Mooltan ...	...	229	415	359	220	111	139	105	124	
Sealkote ...	280	318	337	217	...	157	130	104	152	
Rawul Pindee ...	191	196	214	318	...	220	199	217	154	
Nowshera ...	...	82	...	296	...	...	135	...	...
Peshawur ...	212	222	226	209	204	283	218	120	72	
Saugor ...	...	482	490	617	473	399	356	245	190	
Nagode ...	...	293	295	178	252	...	198	104	49	
Jubbulpore ...	...	523	268	363	470	525	271	129	165	
Lahore Fort ...	...	211	...	214	...	151	220	198	185	
Roorkee ...	...	...	375	293	192	177	213	...	127	
Jhansie ...	...	...	273	322	479	346	203	197	153	
Attock ...	...	...	141	307	...	158	147	331	93	

At Fyzabad, Seetapore, Cawnpore, Meerut, Delhi, Peshawur, Saugor, Nagode, Roorkee and Attock, the diminution in venereal disease during has been most marked.

360. Taking the years 1859 to 1867, the admissions from venereal disease among European soldiers throughout the Bengal Presidency, per 1,000 have been as follow :—

Venereal disease in 1867, compared with previous years.

1859	...	...	...	...	359 per 1,000.
1860	...	...	...	...	338 „
1861	...	...	...	...	369 „
1862	...	...	...	...	318 „
1863	...	...	...	...	281 „
1864	..	...	...	...	254 „
1865	...	...	...	...	227 „
1866	...	...	...	...	217 „
1867	...	...	...	...	166 „

The results of 1867 thus compare very favorably with those of any of the previous eight years. The improvement has been steadily growing, and with the exception of 1861, in which there was a slight increase of admissions over 1860, it has advanced without a check. A diminution of from 359 admissions to 166 admissions per 1,000, or to less than one-half, is very decided, and speaks well for the preventive measures adopted. It is however to be remarked that in former years venereal disease was by no means so prevalent as it has been since 1859. Dr. Hugh Macpherson's tables shew that during the eight years ending 1853-54 out of an aggregate strength of 1,56,139 soldiers 34,438 cases of venereal disease were treated, or a ratio of 220 per 1,000. According to Dr. Bryden's tables in which the admissions from venereal disease are shewn for each year since 1852-53 they were as follow :—

1852-53	...	...	...	...	203 per 1,000.
1853-54	...	...	...	...	133 „
1854-55	...	...	..	...	177 „
1855-56	...	...	...	...	179 „
1856-57	...	...	...	...	149 „
1858	...	...	...	...	261 „

The marked increase of venereal disease coincident with the great accession of European Troops in 1858 is worthy of notice.

361. In the Military stations of Oude the preventive measures were carried out with great care. The results have been very remarkable and illustrate what may be effected where the authorities, both Civil and Military, heartily co-operate. With the Hon'ble Mr. Strachey's permission the following very interesting memorandum shewing what was effected when he was Chief Commissioner of Oude is given in extenso.

Results of the measures adopted in Oude.

Diagram No. 1 shows the monthly admissions into hospital per 1,000 men for all cases of venereal disease in all the stations of the Oudh Military Division* for the years 1862 to 1866. The maximum rate was nearly 42 in the month of January 1862, which is equivalent to the admission of 500 men out of every 1,000 men in the course of the whole year. The minimum rate was about 13 per 1,000 in July 1864. The annual averages per 1,000 have been—

* Lucknow.
Fyzabad.

Seetapore.
Roy Bareilly.

1862	...	...	...	...	325	per 1,000
1863	...	...	...	...	304	"
1864	...	...	...	...	266	"
1865	...	...	...	...	292	"
1866	...	...	...	...	309	"

and for the whole period the annual average has been 300 per 1,000.

The average for the whole British Army in the Bengal Presidency has been somewhat less than for the stations in Oudh. This may be accounted for by the fact that the principal Oudh Stations are in the proximity of larger towns than is ordinarily the case in other provinces.

The yearly fluctuations are, doubtless, in some degree, due to the changes of the troops; for these will bring with them alterations in the habits of the Military population, and variations in the cases of old disease not directly due to the locality.

On the whole, there was a decided improvement in the general health of the Army at large in these respects in the five years ending with 1866, and a less marked improvement in Oudh.

It will be observed that there is a considerable fluctuation in the number of admissions from month to month; that the maximum number is always in the cold months from January to March, and the minimum in the hot months from June to September. This is shown clearly in Diagram No. 2. The black line shows the monthly variation for the whole British Army in the Bengal Presidency for one year, 1866; and the blue line, the averages for the Oudh Stations for the five years, 1862 to 1866. The close accordance of the general nature of the fluctuations is sufficient to show that they follow a physical law. Reduced to figures, the conclusion arrived at may thus be stated, that out of every 100 admissions in the year, the following will be the monthly numbers:—

January	10.3	} Total 100.
February	...	...	...	...	10.6
March	...	...	...	...	10.8
April	...	...	...	...	10.0
May	...	...	...	...	8.7
June	...	...	...	...	7.3
July	...	...	...	...	6.7
August	...	...	...	...	6.5
September	...	...	...	...	6.7
October	...	...	...	...	6.9
November	...	...	...	...	7.3
December	...	...	...	...	8.2

In comparing the actual admissions into hospital in any month with those of any other month, this fluctuation must be borne in mind, or very wrong conclusions will be come to. For the purpose of making such a comparison, it will be the best plan to reduce the monthly number to the corresponding yearly total. The following multipliers are calculated to accomplish this reduction:—

					Multipliers.
January	...	...	...	...	9.7
February	...	...	...	...	9.4
March	...	...	...	...	9.3
April	...	...	...	...	10.0
May	...	...	...	...	11.5
June	...	...	...	...	13.7
July	...	...	...	...	14.9
August	...	...	...	...	15.1
September	...	...	...	...	14.9
October	...	...	...	...	14.5
November	...	...	...	...	13.7
December	...	...	...	...	12.2

Thus, if the actual number of admissions in March were observed to be 54, and in July to be 31, it must not be inferred that the general health had improved. We multiply 54, the actual number for March, by 9.3, the multiplier above given, and find that 502 will be the probable annual number. Next we multiply 31, the actual number for July, by 14.9, the multiplier, and find the probable annual number to be 507, which is a trifle worse than the former, instead of being better.

It next becomes necessary to refer to another possible cause of disturbance in comparing returns of this sort. The new cases of recent infection will be directly dependent on the extent of local disease. The old or secondary cases will be primarily dependent on the extent of former disease, and in some degree probably on its severity. If by means of any precautions, no matter of what description, the fresh cases are reduced in number, no immediate effect will be produced on the secondary cases and the whole useful effect of such precautions will not at once become apparent. In proportion as the new cases are reduced, the secondary cases will hereafter also be reduced, a certain time must be allowed to elapse before the full reduction of those old cases can take effect.

Diagram No. 3 shows the total monthly admissions in the stations of Lucknow, Fyzabad, Seetapore, and Roy Bareilly, from July 1866 to December 1867. The recent measures may be considered to have come completely into effect in May and June 1867.

The details of the actual admissions in each station during the same period, reduced to proportions per 10,000 men, are shown in Table 1. In regard to the obvious reduction in the number of admissions, which is observable after May 1867, attention must be paid to what has been said above, regarding the monthly fluctuation and the necessity for allowing for this.

The results, after this allowance has been made, may be stated as follows:—

The total admissions at Lucknow in 1866, were at the annual rate of 252 per 1,000. For the last six months of 1867, the rate has fallen to 163 per 1,000.

The total admissions at Fyzabad in 1866, were at the annual rate of 340 per 1,000. For the last six months of 1867, the rate has fallen to 93 per 1,000.

The total admissions at Seetapore in 1866, were at the annual rate of 481 per 1,000. For the last six months of 1867, the rate has fallen to 54 per 1,000.

The total admissions at Roy Bareilly, in 1866, were at the annual rate of 214 per 1,000. For the last six months the rate has fallen to 194 per 1,000.

The general scope of such a reduction as the above may thus be stated:—

For the whole British Army, in the Bengal Presidency, in 1866, on a strength of, say, 35,000 men, there were 9,300 cases.

At the Seetapore rate, the cases would have been reduced from 9,300 to 1,820. This would have prevented 7,410 men from going into hospital in the year. If it be reckoned that every case is under treatment for a month, the improvement in health thus obtained would add 600 men to the effective strength of the army permanently, or nearly two per cent. of the whole.

The percentage of monthly admissions for all cases—those of recent infection, as well as secondary affections—is shown in Table II. An examination of these figures will show that, for the 11 months before June 1867, the proportion of old or secondary cases to the total number was 18.2 per cent. From June to December 1867, the proportion is 29.5 per cent. If no better result be eventually obtained than the reduction of the number of secondary cases to the percentage at which it before stood, the present total rates should, from this cause alone, further be reduced by about 11 per cent.

Making the proper allowance for the monthly variation, the actual average annual rate for the four stations of Oudh, during the last six months will be as follows—

June	...	...	...	...	142
July	...	...	...	...	145
August	...	...	...	...	149
September	...	...	...	...	137
October	...	...	...	...	129
November	..	...	...	..	133
December	...	...	...	...	112

AVERAGE 135 per 1,000.

If this result be further reduced, as before explained, to allow for the eventual diminution of the secondary cases we should arrive at 121 per 1,000 as the result already accomplished in these four stations. The average of the previous five years was 300 per 1,000.

On a general review of the whole of the circumstances, it may reasonably be said that, for the average of the British Army in this presidency, an annual rate of 100 admissions per 1,000 should certainly be reached without difficulty, and quite possibly the rate may be reduced below 50 per 1,000. It should here be repeated that the Seetapore average for the last six months is already only 54 per 1,000.

In conclusion, it seems necessary to direct attention to the importance of all Commanding Officers closely watching the returns of this description. What has been done in Oudh may be done everywhere else. It should be the duty of Commanding Officers to see that every possible measure is carried out which shall conduce to the health of their men in this matter. It may safely be said that, if the rate exceeds about 150 per 1,000, proper care is not being taken. If a special explanation were required when the rate rose above 100 per 1,000, it would probably be found that some want of care lay at the bottom of all important excesses over that rate. The returns of the sickness of the Army are wholly designed to enable the superior Administration to ascertain the conditions under which the sickness arises, and if possible, to prevent it, and to make such returns in a merely formal manner, is to neglect one of the most serious obligations imposed on Commanding and Medical Officers.

TABLE I.

Shewing comparison of cases of Venereal Disease in the several Military Stations in Oudh for 1866-67.—Actual cases reduced to proportions per 10,000 men.

	LUCKNOW.				FYZABAD.				SINGAPORE.				ROY BARRILL.			
	1866.		1867.		1866.		1867.		1866.		1867.		1866.		1867.	
	Cases of recent infection.	All cases.	Cases of recent infection.	All cases.	Cases of recent infection.	All cases.	Cases of recent infection.	All cases.	Cases of recent infection.	All cases.	Cases of recent infection.	All cases.	Cases of recent infection.	All cases.	Cases of recent infection.	All cases.
January	...	...	160	195	...	...	312	375	...	...	135	169	...	...	442	468
February	...	...	144	211	...	...	329	339	...	...	120	137	...	...	498	498
March	...	...	196	216	...	...	173	216	...	...	156	208	...	...	367	445
April	...	...	188	244	...	...	108	130	...	...	122	209	...	...	101	101
May	...	...	160	244	...	...	86	108	...	...	...	470	...	...	76	101
June	...	...	28	61	...	...	87	98	...	...	298	298	...	...	76	77
July	114	148	64	104	162	162	99	121	198	234	53	53	170	219	40	82
August	159	184	76	112	240	273	77	99	308	308	18	18	179	243	51	102
September	202	216	62	111	273	305	33	55	546	56	18	18	317	317	102	179
October	172	198	65	108	198	220	33	33	489	525	54	54	221	219	154	154
November	153	180	107	141	164	176	34	34	76	76	38	38	...	78	...	...
December	103	156	89	115	178	198	13	42	75	119	...	...	26	53	...	...

TABLE II.

To show relation of cases of recent infection to total cases of Venereal Disease in the four Military stations in Oudh, and shewing the results of 1866, compared with those of 1867.

	1866.		1867.	
	Cases of recent infection.	All cases.	Cases of recent infection.	All cases.
January	.....	273	225	260
February	.....	315	209	251
March	.....	384	202	237
April	.....	291	156	205
May	.....	283	170	235
June	.....	200	81	104
July	139	167	66	97
August	204	233	67	97
September	274	290	53	92
October	222	247	65	89
November	130	155	78	98
December	108	150	64	92

N. B.—The actual monthly admissions are reduced to the proportion on 10,000 men.

362. In not a few stations the regulations have failed chiefly because they did not embrace the neighbouring town or villages from which disease chiefly emanated. This defect has now in many places been remedied, and the Act has been extended so as to include an area of several miles on all sides of the military cantonments. When this measure has been generally adopted, and the "Contagious Diseases Act," which lately became law has been introduced into Native Towns, a great improvement may be anticipated. There are other points with reference to the proper working of the rules which demand attention,—some of them questions which cannot with propriety be discussed in a public report. It must be admitted that the rules for the prevention of venereal disease have already effected much good. The reduction in the admissions from this cause gives a very inadequate idea of the benefit which they have conferred. The disease has been rendered not only less prevalent but less virulent. Soldiers have been at duty who would otherwise have been in Hospital, and it is to be hoped that a very fertile source of invaliding has been checked.

363. A table has been prepared by Dr. Bryden, in which the deaths of 1867 have been classified according to age in the same manner as he has done for the four preceding years. These figures have already been in a measure, considered with reference to cholera. Excluding that disease which appears to be altogether uninfluenced by age, the results agree in a remarkable manner with those of former years. Under 20 years of age the mortality has been 3.90, and it rises from that gradually up to 26.25—the ratio among men over 30 years of age.

367. The returns of comparative sickness and mortality among married and unmarried British Soldiers during 1867 have been received in full and may be thus summarised:—

Comparative sickness and mortality among married and unmarried in 1867.

Summary of Return for Married and Unmarried Soldiers in 1867.

	Average strength of Married men.	Total number of days spent in Hos- pital during the year.	Average number of days spent in Hos- pital by each man.	Admission rate of the year per cent. of strength.	DETAILS OF STRENGTH ACCORDING TO AGE.						DETAILS OF DEATHS ACCORDING TO AGE.						Total admissions and deaths during the year.	CAUSES OF ADMISSIONS AND DEATHS.												
					Under 20.						40 and upwards.								Under 20.						40 and upwards.					
					Under 20.	20 to 24.	25 to 29.	30 to 34.	35 to 39.	40 and upwards.	Under 20.	20 to 24.	25 to 29.	30 to 34.	35 to 39.	40 and upwards.			Under 20.	20 to 24.	25 to 29.	30 to 34.	35 to 39.	40 and upwards.						
Total for Married men ...	3012	27116	9	68	1 128	835 1331 532 135	1 31 40 26 12	(Admitted ... 2612 Died ... 110)	Cholera.	Fever.	Ileal Apoplexy.	Drunkenness.	Bellium Tremens.	Diarrhea and Dysentery.	Hepatitis.	Veneral affections.	Heart disease.	Phtisis Pulmonalis.	Disease of Lungs.	Ophthalmia.	Scurvy.	Accidents and Injuries.	Suticle.	All other causes.						
Total for Unmarried men ...	30862	567739	18½	138	1283 6995 13515 6310 2131 315	25 212 327 21975 8	(Admitted ... 42834 Died ... 863)	Cholera.	Fever.	Ileal Apoplexy.	Drunkenness.	Bellium Tremens.	Diarrhea and Dysentery.	Hepatitis.	Veneral affections.	Heart disease.	Phtisis Pulmonalis.	Disease of Lungs.	Ophthalmia.	Scurvy.	Accidents and Injuries.	Suticle.	All other causes.							

368. Dr. Bryden has furnished the following interesting Memorandum on the results which are shewn by these figures.

The Comparative Statement for married and unmarried men must not be used solely as illustrating the different circumstances of the two classes; nor must the ratios be employed as indicative of the prevalence of special diseases relative to the fact of a certain number of the men being married and a certain number unmarried. When this table is placed in juxtaposition with the Age Table for 1867 it becomes apparent that the ratios are in many cases representative merely of the fact that a certain proportion of the married men are of an age which contrasts with that of the unmarried men taken as a body. The case stands thus:—Of married men 32 per cent. of the total were under 30 years of age, and 68 per cent. exceeded 30; of unmarried men 72 per cent. of the total were under 30 years of age, and 28 per cent. above 30. In the Age Table it is shewn, that irrespective of the fact of men being married or unmarried, the death rate (exclusive of cholera) was as follows:—

25,790 men below 30, gave 318 deaths—12·33 per 1,000
10,857 men above 30, gave 285 deaths—26·25 per 1,000

This statement cannot be viewed apart from the fact of two-thirds of the married class belonging to the latter group, and the same proportion of the unmarried to the first group. As might have been expected the ratio of mortality is higher for the married than for the unmarried class, although the difference is less than might have been anticipated from the contrast in the ages of the two groups.

3,012 Married men gave 110 deaths—36·52 per 1,000 inclusive of cholera deaths.
" " " or 58 deaths—19·26 per 1,000 exclusive of cholera deaths.
30,862 Unmarried men gave 868 deaths—28·09 per 1,000 inclusive of cholera deaths.
" " " or 498 deaths—16·10 per 1,000 exclusive of cholera deaths.

The chief components of the death rate of each class are shewn below.—

				Married.	Unmarried.
Cholera	...	...	...	17·26	11·99
Fevers	...	...	...	1·99	2·50
Heat apoplexy	...	...	...	2·99	1·52
Drunkenness	...	...	...	·33	·26
Delirium Tremens	...	...	...	1·33	·32
Dysentery	...	...	...	1·99	2·66
Hepatitis	...	...	...	1·00	2·46
Heart disease	...	...	...	1·00	·96
Phthisis Pulmonalis	...	...	...	2·66	1·17
Lung diseases	...	...	...	1·00	·94
Accidents	...	...	...	·66	·68
Snicide	...	...	...	·66	·32
All other causes	...	...	...	3·65	2·24
Died per 1,000	...	...	...	36·52	28·09
Exclusive of cholera	...	...	...	19·26	16·10

In the epidemic of 1867, married men and their families suffered from Cholera in a higher ratio than the unmarried men. The loss per 1,000 was among unmarried men, 11·99; among married men, 17·26—women, 19·28—children, 19·23.

The higher ratio among the unmarried for fevers, dysentery, and hepatitis probably means, that, taken as a class the married men have passed through the stage of adaptation of their constitutions to the Indian climate, while a large proportion of the younger men are incurring the chance of dying from fever or visceral disease in the earlier years of their Indian service. It is in the diseases to which the Age Table shews that the older men are more peculiarly liable, that the ratios of the married exceed those of the unmarried;—in Heat Apoplexy, Delirium Tremens, Heart disease, and the diseases grouped under the head "all other causes."

It would not be very incorrect to say that this Death Table for married and unmarried men is an Age Table in which the exaggeration of the ratios is compensated for, and the ratios for the two classes approximated by the fact of one-third of the married men being below 30 years and one-third of the unmarried above 30 years of age.

Of the Total Deaths of Married men 29·09 per cent. were in men below 30 and 70·91 in men above 30.

Of the Total Deaths of Unmarried men 64·98 per cent. were in men below 30 and 35·02 in men above 30.

AGES.	MARRIED.			UNMARRIED.		
	Strength.	Deaths.	Ratio per 1,000.	Strength.	Deaths.	Ratio per 1,000.
Under 20 ...	1	...	33·20	1,293	25	25·51
20 to 24 ...	128	1		6,998	212	
25 to 29 ...	835	31		13,815	327	
30 to 34 ...	1,331	40	30·00	6,310	218	34·55
35 to 39 ...	582	26	53·00	2,131	78	35·16
40 and upwards.	135	12		315	8	

N. B.—The Return does not show how many of the men have died at the different ages from Cholera.

But the ratios for men of the same ages, are, in the two classes, in some respects dissimilar. Among the oldest men of either class (above 35) the ratio is much in favour of the unmarried. The habits and constitutions of the oldest married men no doubt bring about this disparity. Very many among them are old soldiers who have volunteered for further Indian Service in consequence of having wives and families. The comparative segregation of Married men also, is apt to lead them on to habits which, as in the case of the Non-Commissioned Officer, determines death by apoplexy or delirium tremens.

The Admission rates for the two classes are given in the following table, shewing the admissions per cent. of strength for the year.

				Married.	Unmarried.
Cholera	...	...	...	2.12	1.79
Fevers	...	...	...	26.69	44.29
Heat Apoplexy	...	...	...	.63	.40
Drunkenness	...	...	...	2.75	1.85
Delirium Tremens	...	...	...	.63	.34
Dysentery and Diarrhoea	...	...	...	9.66	12.80
Hepatitis	...	...	...	3.22	5.52
Venereal diseases	...	...	...	.40	16.94
Heart diseases	...	...	...	1.06	1.14
Phthisis Pulmonalis	...	...	...	.93	.66
Diseases of Lungs	...	...	...	3.55	4.23
Ophthalmia	...	...	...	6.04	2.38
Accidents	...	...	...	5.64	9.56
Suicide	...	...	...	.03	.04
All other causes	...	...	...	24.33	36.20
Admitted per cent. of strength	..	...	...	87.68	138.13

The exaggeration in the case of Unmarried men in regard to Fevers, Dysentery, and Hepatitis, shewn in the Death Statement, is exhibited also in the Admission Table; while Cholera, Heat Apoplexy, Drunkenness, Delirium Tremens, predominate in the case of married men. The diseases grouped as "all other causes" are less by a third in the case of married men, thus reversing the proportion of Deaths to Admissions in the two groups.

"All other causes" ... { Married, admitted per cent. 24.33 died per 1,000 3.65.
Unmarried 36.20 2.24.

Ophthalmia is exaggerated in the case of the married men, owing probably to infection when families are suffering from the disease; the rate stands 2.38 per cent. in the case of unmarried men, and 6.04 per cent. in the case of the married.

Admissions from venereal diseases are represented among married men by a ratio of .40 per cent., the equivalent of 12 admissions; and among the unmarried, by a ratio of 16.94 per cent., which stands for 5,227 admissions.

The Admission rate of 87.68 per cent in the case of the married against 138.13 in the case of the unmarried, is affected by the item of venereal alone to the extent of 16.50 per cent. And the same cause determines a great diminution in hospital residence in the case of the married men. It appears from the following Statement that during 1867, on the average, each Unmarried man spent eighteen days in Hospital, while the married men spent each nine days only.

3,012 Married men spent 27,146 days in Hospital, or 9.01 days per man.

30,862 Unmarried men spent 567,739 days in Hospital, or 18.39 days per man.

369. The particulars of the relative sickness and mortality among total abstainers, temperate and intemperate British

Comparative sickness and mortality among temperate and intemperate in 1866. Soldiers serving in the Bengal Presidency during the year 1866 are shewn in the following statement; the character of the men is also noted.

Statement shewing the comparative sickness and mortality among total abstainers, temperate and intemperate British Soldiers serving in the Bengal Presidency during 1866.

CLASSES.	Average Number during the year.	Average daily sick.	Number of deaths.	Number attacked by Cholera.	Number died of Cholera.	Number invalided to England.	Number sent to the Hills.	CHARACTER.				
								Good.	Indifferent.	Bad.	Punished by Commanding Officer.	Tried by Courts Martial.
I.—Total abstainers	791.22	35.96	5	...	...	27	20	766.19	18.95	6.08	72.57	16
II.—Temperate	20,318	1,493.77	547.09	59	35	1,401	1,101	26,864.85	1,867.81	596.20	16,034.21	1,175.47
A. Drinking Malt Liquor	866.21	53.41	19	...	...	27	16	705.37	118.84	112	608	40
B. Drinking spirits	28,452.65	1,440.36	528.00	59	35	1,374	1,085	26,159.48	1,748.97	544.20	15,426.21	1,135.47
III.—Intemperate	3,237.53	174.16	72	11	8	133	51	524.06	1,002.63	710.84	4,549.14	976.22
A. Drinking Malt Liquor	5.53	...	...	...	...	...	...	1	4.27	.28	1.25	2.26
B. Drinking spirits	2232	174.16	72	11	8	133	51	523.06	998.36	710.56	4,547.89	973.96

370. The following particulars regarding the comparative sickness and mortality as well as the comparative character of British soldiers in the year 1867 classed according as they are total abstainers, temperate and intemperate, have been taken from the general annual return prepared in the Office of the Adjutant General. It appears that among the European soldiers in the Bengal Presidency the numbers of each in the different arms of the service were as shewn in the following statement:—

Statement shewing the number of total abstainers, temperate and intemperate British soldiers serving in the Bengal Presidency during 1867.

	Number reported on.	Abstainers.	Temperate.	Intemperate.	Total.
Cavalry	2,518	76	2,354	88	2,518
Artillery	5,033	39	4,577	417	5,033
Infantry	23,985	532	22,362	1,091	23,985
Total	31,536	647	29,293	1,596	31,536

The results as regard sickness, mortality and invaliding are exhibited in the following statement:—

Statement shewing the comparative sickness, mortality and invaliding among total abstainers, temperate and intemperate British Soldiers serving in the Bengal Presidency during 1867.

	Strength.	Average daily sick	Ratio of sick per cent.	Number of deaths.	Ratio of deaths per cent.	Number invalided to England.	Number sent to hills.
Total Abstainers	647	1.08	2.7	15	2.3	12	15
Temperate	29,293	1397.9	4.7	850	2.9	1,428	1,203
Intemperate	1,596	87.5	5.4	61	3.8	76	43
Total	31,536	...	...	926	...	1,516	...

According to the effect on discipline and character the results were as follow:—

Statement shewing the comparative character of total Abstainers, temperate and intemperate British Soldiers serving in the Bengal Presidency during the year 1867.

	Strength.	Cases punished by Commanding Officer.	Cases tried by Court Martial.	CHARACTERS.			
				Good.	Indifferent.	Bad.	Total.
Total Abstainers	647	54	4	636	9		647
Temperate	29,293	16,706	1,099	26,925	1,820	548	29,293
Intemperate	1,596	4,782	894	225	723	648	1,596

Further particulars are given with the view of shewing the relative effects of drinking spirits and malt liquor, but the number who even as a rule confine themselves to the latter is too small to allow of any conclusions being drawn. For the reasons stated in last year's report these results cannot be accepted as altogether accurate. The returns of total abstainers are doubtless correct, but very different meanings attach to the words temperate and intemperate; not unfrequently it is to be feared the soldier who drinks in secret and whose character may to all outward appearance be good, is the man who suffers most in health by the intemperate use of intoxicating liquors.

371. Table No. XIII shews the extent of invaliding in the European Army during 1867, including both the number of Invaliding in 1867. soldiers discharged and the number returned to England for change of climate. The diseases to which both forms of invaliding have been due are also specified. The total loss per 1,000 on this head has been 47·28. This is somewhat less than it was in 1866, when the ratio amounted to 49·04, but is in excess of what it was during any of the preceding years, the particulars of which were tabulated in last Annual Report. Taking invaliding and deaths together, the loss to the European Army during 1867 has amounted to 78·23 per 1,000. Dividing the invaliding into the two heads shewn in Table XIII, it appears that of the 1,636 men entered, 546 were invalided for discharge, and 1,090 for change of climate. Of the total ratio of 47·28 almost exactly two-thirds were due to invaliding for change of climate and one-third to invaliding for discharge from the service. The loss sustained by invaliding in different Regiments is shewn in Table XVI.

372. In estimating the comparative salubrity of different Stations and in comparing different Regiments according to the Comparison of Stations and extent of sickness and mortality which have prevailed in each, the virulent epidemic of cholera which was so widely spread during the past year will be found to have had a very material influence. Any comparison, indeed, in which this disturbing element is not specially kept in view, will serve rather to lead to error than to assist in establishing any correct conclusion. There is good reason to believe that this disease which has so largely added to the death-rate during the past year, is not attributable to any insanitary conditions or any other causes inherent in those stations of Northern India, in which it has chiefly prevailed. In nearly every instance the high mortality has been due to cholera, and the distribution of this epidemic and its relative prevalence and fatality in different places have been fully considered in the portion of the Report devoted to this subject. At Peshawur, for example, as shewn in Table VIII, out of a total death rate of 121·44, the proportion of 92·93, was due to cholera; at Meean-Meer 50·49 out of 77·67; at Shajehanpore 40·25 out of 44·49; at Meerut 70·30 out of 93·10. At Roorkee and Delhi the mortality was high, having reached 41·67 and 34·19 respectively. In both cases the results were due chiefly to a peculiar form of fever which prevailed among the men of the 79th Regiment, one wing of which occupied each of these stations. The precise nature of this fever has not been ascertained. It is believed to have been acquired when the

Regiment was on its march from the Punjab, and to be allied in nature to the disease which has been so prevalent and fatal both among the prisoners and the free population of Upper India.

373. Table XVII shows the ratio of admissions into Hospital and of deaths among European women and children and also the diseases to which these have been due.
Sickness and mortality among women and children. Among women out of an average strength of 3,008, there have been 4,088 admissions, and of these 139 have died, the ratios being respectively 135·90 and 46·21. The ratio of admissions does not represent the total sickness, as many trifling cases are treated in quarters. In 1866, the death-rate among women was only 25·46 per 1,000, but in no previous year had it been less than 42. During the four years ending 1853-54, the average was 44·5, and during the four years ending with 1863, it was 49·6. High, therefore, as has been the death-rate during the past year, it is rather under than over the average. Of the total mortality of 46·21, the proportion due to cholera was 19·28. Among children the ratios of admissions and deaths have both been very high. The former amounted to 969, and the latter to 104·9 per 1,000. In 1865, the ratios were 757 and 83·15. In 1866, they were 804 and 75·11. Here again cholera has contributed largely to the mortality, 94 children having died of that disease during the past year.

374. An important addition has been made to the rules and regulations for the sanitary administration of Military Cantonments. In connection with the appearance of cholera among non-Military residents, and especially among the large population often dwelling in regimental and sudder bazars, the Sanitary Commissioner pointed out the advisability of establishing a registration of deaths and causes of death among all those living within Military Stations. Hitherto it has been impossible to collect information regarding the first appearance of any epidemic disease among the Native population, often residing close to the Barracks occupied by European Troops. Cholera, small-pox, or fever, may be prevalent and fatal, and yet attract no attention. Regarding the late severe epidemic of cholera no data can be collected respecting the population of bazars within cantonments or even the camp followers attached to regiments. The new order will supply this defect, for though cases of sickness will not appear, the presence of any virulent disease must become known by the casualties recorded. G. O. C. C. No. 199, dated the 30th August 1867, directs that "there shall be kept up in all Military Cantonments a careful registration of all deaths and their causes whether of Europeans or Natives, Military or Civil, including all residents and servants in private compounds and regimental bazars," and a weekly statement of the results will be regularly submitted for the information of the Cantonment Committee.

375. The question of compelling all non-Military persons, residing within the limits of cantonments, to submit to vaccination, as a condition of residence, has also been under the consideration of the Government. As inoculation is prohibited under Rule 11, Chapter III of the new Cantonment Regulations

which declares that "no person shall do within the limits of the cantonment any act which he knows or has reason to believe to be likely to spread the infection of any disease;" the people are thereby deprived of the protection which it affords, and it appears indispensably necessary that the other and more suitable protection offered by vaccination, should be substituted. No compulsion, however, would be laid on any person to submit his children to an operation to which he objects. If he has scruples in the matter he can reside elsewhere, or remove his children for a time until they have passed through the disease. As the native residents prosper through the presence of the Military it is very proper that they shall not be allowed to harbour any source of danger to the soldiers which can be removed by reasonable precautions.

376. In accordance with instructions received from the Secretary of State, it has been determined to prepare maps of all
Plans of Military stations. Military Stations, of the country in their vicinity, and of the Military buildings, which they contain. When carried into effect, these plans, among other useful purposes, will afford great assistance in investigating the sanitary condition of any particular cantonment and in following the history of any unusual outbreak of disease.

377. In pursuance of the general principles of Barrack accommodation for European Troops, which have been adopted by
Details of Barrack Accommodation. the Government, further plans showing the arrangement of buildings and the disposition of accommodation have been issued since last report. Among these may be mentioned a standard plan for a hospital for the treatment of women and children in which important modifications were introduced at the suggestion of the Sanitary Commissioner—a standard plan of dead-house for European hospitals; the arrangement of the lines of a British Cavalry Regiment; and accommodation for a Garrison Company of Artillery. The Sanitary Commissioner also attended a special committee assembled to confer on the subject of fortified posts in small cantonments.

378. It has been decided that the best Barrack cot for European Troops in India is one consisting of "iron trestles with
Cots for European Troops. planks." This form of bed was strongly recommended by the Bengal Sanitary Commission. Five thousand cots of this description are being made up at the Roorkee Workshops, and it is expected that they will be ready for issue by the 1st of September. In the Annual Report for 1866 mention was made of the experiments which the Commissary General proposed to undertake in order to determine what was the best form of material obtainable in the local market for making soldiers' bedding. No information has yet been received regarding the results.

379. Appended to last Annual Sanitary Report is a special report by Dr. Macnamara, Chemical Examiner to Government,
Analysis of Water. on the results of the analyses of waters used by European Troops, which had been made in the end of 1866 and beginning of 1867. A further report has since been submitted showing the operations which

have been conducted in the months of April, May, early part of June of the latter year. It refers to 20 stations. They were as follow, the name of the Medical Officer, by whom the examination was conducted being entered opposite each.

Peshawur	...	...	...	Dr. Center.
Ferozepore	...	...	...	Dr. D. P. Palmer.
Umballah	...	...	...	Ditto.
Delhi ...	...	...	...	Dr. Sheppard.
Agra ...	...	...	...	Dr. Cameron.
Morar...	...	...	...	Ditto.
Saugor	...	...	...	Dr. Griffith.
Jubbulpore	...	...	...	Ditto.
Meerut	...	...	...	Dr. Gage.
Bareilly	...	...	...	Ditto.
Lucknow	...	...	...	Dr. Orton.
Allahabad	...	...	...	Drs. Milne and Compigne.
Cawnpore	...	...	...	Ditto ditto.
Dinapore	...	...	...	Dr. Jameson.
Hazareebaugh	...	...	...	Dr. Thomson.
Dum-Dum	...	...	...	Dr. Macnamara.
Barrackpore	...	...	...	Ditto.
Chinsurah	...	...	...	Ditto.
Jhansie	...	...	...	Dr. Griffith.
Fort William	...	...	...	Dr. Macnamara.

380. It is not necessary to detail the results which have been obtained in these stations. They have already been sub-

Results of the Analyses.

mitted to the Government and have been commented on both in a chemical and practical point of view by Dr. Macnamara. It is to be observed, however, that the manner in which the analyses have been conducted is not altogether free from exception. As Dr. Macnamara remarks :—" It is evident from the experience of the two past seasons that as might *a priori* have been expected, the analysts differ very much in their aptitude for this special work, though all exhibit an amount of technical knowledge that would not have been looked for in officers who entered the service before the establishment of the Netley course. No doubt these gentlemen receive the best course of training, it is possible to give them short of an independent course in a working chemist's laboratory, still I fear that not a few of those thus trained will fail when thrown upon their own resources, just as many a man who has passed in anatomy fails altogether as an operative Surgeon. My experience as a teacher of practical chemistry is, that very few individuals out of a large class have the qualities to make them successful analysts. Very few will be found to have any taste for chemical analysis; many students appear incapable of recognizing any error or source of error which accidentally obtrudes itself in even the simplest processes, while, if error is possible, they fall into it, and other students wanting in perseverance and exactness readily content themselves with an imperfect result." Another very important point to be noticed is that the balances employed in their analyses were "decidedly inferior, clumsy, roughly made; difficult to get into good working order and very apt to give wrong indications unless used with the most extreme circumspection." In one instance the analyses are reported to be "very defective and evidently unreliable" in another, "only very general inferences can be drawn from them." At the same time it must be stated that the Reports of several of the Analysts, the summary of the results as con-

mented on by Dr. Macnamara, and the attention which is being directed to the water supply are calculated to be productive of much good.

381. In several stations measures have been adopted to remedy the defects in the water supply which have been brought to notice by the analysts. In some the wells have been sunk to a greater depth in order to obtain a more efficient supply, in others they have been provided with covers to prevent leaves of trees and other impurities from falling into them. At Dum-Dum a sentry has been posted at the Digla Tank in order to prevent cattle from going into it, and also to prohibit persons from bathing and washing clothes in it. In other stations wells which were unfavorably reported on have been closed, and the supply is now drawn as far as possible from the source most highly recommended.

382. Another suggestion regarding the improvement of the water supply has also been made by His Excellency the Commander-in-Chief. As the Quarter Master General observes : "In wells both in use and disuse a vast quantity of organic and vegetable matter is continually accumulating, such being composed of the washings of dirty vessels, rotten leaves, &c., and no one who has witnessed the cleaning out of a well in this country could not but have been struck with the amount and putrid nature of the matter excavated." It has accordingly been recommended that an annual cleaning of all wells in cantonments and encamping grounds should be observed and that they should be provided with a coping as an essential part in their construction. No orders have yet been issued on this subject, but information has been called for with a view to carrying out the recommendations made.

383. It is gratifying to be able to note that the use of a better water at Delhi has been attended with most marked benefit in diminishing the prevalence of Delhi sores. As stated in the second Annual Sanitary Report this intractable disease had affected the European Soldiers in large numbers during their first year of residence. Since 1857 when Delhi was first garrisoned by British Troops, as many as from 400 to 700 per 1,000 had been attacked, and although the disease was not of a fatal character it seriously crippled the efficiency of the force. "The sore is not usually painful nor is the health generally affected, but it is of a most tedious character, and as it most frequently attacks the face and hands it occasions a very great amount of disfigurement." The Officer Commanding at Delhi now reports that "the sore seems to have quite left the garrison ;" "there has not been a single case amongst the men of the 79th since they arrived." To the better barrack accommodation, to the improved sanitary condition of the vicinity, to increased space, and above all to the use of Jumna water instead of that drawn from wells this very marked improvement may be ascribed. Dr. Sheppard particularly mentions in his note regarding Delhi waters appended to Dr. Macnamara's report, that the 79th Regiment "paid great attention to the filtration of the water ; in fact greater care or solicitude for the efficient performance of this important process could not have been manifested by any Corps."

384. In connection with the purity of the water supply the question has arisen, how defects in the present mode of filtration may be remedied and a better apparatus substituted for it. The filters now in use in all barracks and hospitals are thus described by Dr. Macnamara. "They consist of three earthen jars supported on a stand one above the other. These jars are half filled with wood-charcoal and sand, and each is pierced below with a hole through which a tag of linen guides the water as it filters into the mouth of the vessel next beneath; from the second vessel the water falls into another usually of a larger size in which it is stored for use, and from which it is taken by means of a pot of some sort dipped into the jar. A row of such filters stands in the Hospital or Barrack verandah, or in the wards themselves. In one hospital I have seen them placed immediately outside the cholera ward, four or five yards distant from the beds."

385. The objections to this form of filter are obvious and they are clearly stated by Dr. Macnamara: "1st—The vessels are all open, and not only do insects and dust—the sweepings of the ward—fall into them, but they are free to receive the germs of disease which may be floating in the Barrack room, or more especially in the hospital ward, while the water must absorb a portion of any noxious gaseous emanations present in the air. 2nd—The organic and other matters suspended in the water collect in the ghurrahs, especially in the upper one, and there, decomposing and becoming soluble, add to the amount of soluble organic matter already present in the water; indeed, unless the filtering material is very frequently changed, and the vessels each time are well cleansed, this may become a very serious evil. As the vessels are porous, it is difficult to cleanse them thoroughly. 3rd—The water is removed from the lower vessel only by dipping a pot into it, and either the pot or the hand may, and very frequently will, soil the water, especially if ward coolies are employed; but further, the water is only occasionally changed, and the sediment which sinks to the bottom of the storage vessel must slowly contaminate the residual water, which, in its turn, infects the fresh water dropping in from above. 4th—The filtering medium is bad, in fact useless unless for removing the coarser suspended matters. 5th—The trouble that is necessary in cleansing the filters and changing the material, is such, that the work is often too long neglected. These are no fanciful objections to the present description of filter; they must appear obvious to any one who will give the matter a little serious consideration, and the reports which I have received from the analysts concerning the filtered water they have examined, prove them real. Almost always, as a rule, the filtered water contains more organic matter than the water from the source, and the water in the upper vessel more than either. The water in the upper vessel was in many cases found to be swarming with musquito larvæ, and other animalculæ, and has been described as filthy stuff; musquito larvæ, and other animalculæ are very commonly present in the water of the lower vessel. The water from a storage vessel, which I examined, had so strong a smell of a musk-rat,—that I feel sure one must have fallen into it."

386. The requirements of a good filter are, he continues: "1st—That it should deliver an ample supply of water. 2nd—The arrangement of the filter should be such, that the suspended matters in the water may not collect upon the filtering medium. 3rd—The filter should not, as any part of its arrangement, contain an open receptacle, exposing the water to the air of the chamber in which the filter is placed. 4th—The means for drawing the filtered water should be by a cock. 5th—The filtering medium should be readily removable. 6th—The filtering medium should be altogether, or in part, well burnt animal charcoal—perhaps the only substance with which we are acquainted, which can to any great extent, remove dissolved organic matter." To meet these requirements he recommends the general introduction of the Danchell Filter.

387. It is doubtful whether any filter has yet been invented which is thoroughly efficient, and at the same time suitable for Barrack use in India, and until such an apparatus has been beyond all question discovered, the present rough means of purification may with care and attention be worked to advantage. The vessels may be kept closed, and they may be kept perfectly clean. The instructions issued by the Quarter Master General's Department regarding the mode in which they should be used are receiving more and more attention. The increased impurities found in water after filtration must certainly have been due to defects in the management which are very readily removed, for however rude the means may be, if conducted with ordinary care they must at least separate the suspended matters. Animal charcoal might with advantage be substituted for the wood charcoal now employed; but it remains to be seen whether it can be manufactured of good quality in the local market. Dr. Murray Thomson, Professor of Experimental Science at Roorkee, in accordance with a recommendation which was made by the Sanitary Commissioner, is engaged in investigating the action of the filtering medium now in use and in devising any improvements which may appear to be desirable.

388. In accordance with instructions received from the Government, the Inspector General of Hospitals, II. M's British Forces and the Sanitary Commissioner submitted a joint report on the quantity of McDougall's disinfecting powder which should be supplied for each European Hospital. They remarked that it was not intended that the powder should take the place of dry earth for ordinary conservancy purposes, and that, therefore, the quantity required for hospital use would vary considerably with the number of cases of contagious disease, such as small-pox, cholera and others in which its use appears to be desirable. As the powder would not deteriorate, if properly kept, they recommended that one hundred weight should be supplied to the hospital of each Cavalry and Infantry Regiment, and two quarters for smaller hospitals. At the same time it appeared advisable that each Medical Depot should be provided with an ample stock to meet any emergency. As the directions for its use, which have been prepared by the inventor, do not appear to be so generally known as is desirable, they are here extracted.

"Whenever the cause of offensive smell can be reached, it will be sufficient to let the powder be freely sprinkled over it. Where the dry powder cannot be directly applied to the source of impurity, as in sinks, sewers, &c., it may be mixed with water at the rate of an ounce to the quart, and the solution poured in, the quantity used being proportionate to the size of the drain.

In sick rooms a solution of the powder should be placed in the chamber utensils, and the powder freely distributed in different parts of the room, as much surface being exposed as possible. The foul linen should be instantly deposited in water, containing a strong solution of the powder.

Where rooms require fumigation, as in cases of fever, &c., mix the powder with water in an open vessel, and add a little sulphuric acid. A powerful fumigating gas will instantly be liberated, which will effectually destroy all miasma and infectious emanations.

To correct the putridity of water, mix with it a quantity of powder, in the proportion of a quarter of an ounce to a gallon.

To destroy putrid emanations in damp cellars or other closely confined places, the powder may be mixed with water, and applied as a white-wash to the walls and ceiling.

To remove the smell in newly painted rooms, scatter the powder freely over the floors, or fumigate them as above directed.

In stables, cow-houses, or other out-buildings, it must be freely scattered about the floors, and over the surfaces of all substances likely to give out offensive smell.

Beetles or cockroaches may be driven away by sprinkling it freely in and about the holes and crevices from which they come.

Its free use in coffins, or on the bodies of the dead, prevents all offensive smell, and removes all danger from infection; a little of the powder between folds of flannel placed over the mouth and nostrils of the corpse is a convenient method of using it."

For use in Fort William, where it is on all accounts preferable to dry earth, the issue of three tons annually was recommended. This proposal have been approved of by the Government.

389. The working of the soldiers' gardens during the year 1867 appears to have been satisfactory. The abstract of accounts published in G. O. C. C., dated 22nd November 1867 shows that in many of the Corps the number of men who employed their leisure in gardening was large, and that the credit balance was in several cases considerable. In each case the opinion of the Medical Officer has been recorded with regard to the effect which the recreation has had on the health of the men who engage in it and with one exception, this opinion is very favorable. The Surgeon of the 11th Brigade R. A. at Barcilly, for example states—"gardening has proved a benefit to men having no trade to work a

It affords healthful occupation to the mind and body. It relieves the monotony of 'nothing-to-do' in the hot season, and renders the soldier much more satisfied with his lot. Men who garden most are least known in hospital. In no case has gardening been the cause of sickness. No one amusement could have been of so much benefit to the individual soldier as the introduction of garden labor. It tends to impose a healthful moral tone amongst the body of men generally." The Medical Officer of the G. Battery 11th Brigade R. A. at Cawnpore in a similar manner remarks that the men who have been in the habit of working in the garden have all been remarkably healthy, and although he cannot state positively that their good health is due to being so employed, still he feels convinced that the gardening is in part the cause of it, for such exercise in the open air is always beneficial, and men so employed do not spend their time in filthy bazars where the inducements to vice and intemperance exist. In several instances the sickness among those who have employed themselves in the garden is reported to have been in a marked degree less than what it was among the other men of the Regiment, and there can be no question that with the most ordinary precautions the employment is in every way calculated to benefit the soldier both in mind and body.

390. The balance statement of regimental workshops for the year 1866, which was published in G. O. C. C., dated 20th November 1867, shows that these institutions existed in 41 Corps and two Convalescent Depôts. The number of men usually employed in each, has not been entered but the sums noted prove that the transactions have been considerable. The results have in many cases been very satisfactory, and the statement shows that on the 31st December 1866 nearly all the workshops had a balance at credit, varying from a few hundred to several thousand Rupees. The employment of the men in these workshops is calculated to prove of great benefit, to relieve their minds of the *ennui* of barrack life, to give healthful occupation to both mind and body, and to remove them from many sources of temptation. The opinion of the Medical Officers has not been given regarding the sanitary effects of these institutions; and information on this point, as well as to the average number of men employed, might with advantage be furnished in future returns. The statement would then be complete and correspond with that already prepared regarding soldiers' gardens.

391. During the hot season and rains of 1867, the experiment of employing European soldiers in the construction of the road lying between the Hill Stations of Murree and Abbottabad, was continued. The party consisted of 256 Non-Commissioned Officers and men of the Rifle Brigade with 394 from the 88th Regiment and 13 Officers. Work was commenced in May, and continued till the middle of October. In a financial point of view the results were not so favorable as they were in the year previous. In 1866, the out-turn was valued at Rs. 59,043, and the expenditure amounted to Rs. 77,208. In 1867 the expenses were Rs. 78,305, and the out-turn was valued at Rs. 46,213. On the appearance of cholera at Murree it was necessary to move one of the detachments in order to provide accommodation for the

married portion of the depôt at that sanitarium. This movement interrupted work. The operations, moreover, were of such a nature as prevented any very accurate measurement, while it was difficult to classify correctly the different kinds of labor, such as blasting, rock-work, and earth-work, which vary greatly in value. As regards the benefit to the soldiers there is no question. The Officer Commanding the Rifle Brigade reports "most favorably of the advantages, which the men derive from being thus employed." Major Mauleverer, who commanded the Wing of the 88th, thus writes:—"The work had the best possible effect on the health of the men. The hospital return furnished by Assistant Surgeon Heath in Medical charge of the Wing, presents the, I suppose, unexampled statement that of 400 men of all ranks, there was not a single man in hospital or undergoing treatment for several days together in the months of August and September, 29 days being the number of days absolutely without cases, while among the few cases recorded are those of accidents, happily trifling, which occurred on the works. The good effect of the work upon the health and condition of the men was very soon manifested. It showed itself in their faces and bearing as they walked about, and towards the close of the season many and indeed most of the men as they rolled up their sleeves to work with their sledge hammers, crowbars, &c., or stripped for any extraordinary exertion displayed an amount of muscular development which if ever equalled by a body of European Troops in India has, I should think, only been attained by their predecessors in the same locality under the same circumstances. From first to last the party worked with the best possible spirit, cheerfully at all times, even when the road was ankle deep in mud, and they were getting continually wet through from showers. The conduct of the men was throughout very good, and I think the period spent in the hills was much more favorable to discipline than the reverse, for though of course there was little of Military duty to be done, yet the absence of it was amply made up for by the regular healthy occupation on the works and the freedom from the temptations of barrack life in a cantonment, in the hot months, in the plains. Very little drunkenness occurred. There were three trials by Court Martial for insubordinate language, but two of these were on the same individual, and they were on men whose conduct certainly did not change for the worse in the hills; otherwise there was scarcely any crime, and since the return of the Wing to Head Quarters with pockets full of money, their conduct has been exceedingly good, so much so as to have been the subject of remark." Dr. Heath's Table shows that out of an average of 390·8 the average daily sick for over 5 months was 0·42. The report of the Surgeon of the Rifle Brigade is also very favorable. In reviewing the operations of the season His Honor the Lieutenant Governor of the Punjab observes that "the great advantages of this employment of European soldiers are confirmed by each year's experience. The benefits conferred on the men employed are unquestionable. It is only necessary further to notice again with respect to the benefits to the State that in addition to this accession of Military strength in the person of these soldiers, we have an important piece of work done with little demand on local hired labor, a very important consideration; and that by the removal of these 600 men to the hills additional accommodation has been available during the hot season for the troops at those stations from which the working parties have been taken."

392. In connection with a notice of those occupations which are calculated to afford recreation and healthy employment to the men, the subject of Military Gymnastics must not be omitted. Approved plans of a Gymnasium have just been issued. The building is in the form of a cross and contains a large centre hall 80' x 42'. In one Wing is the Recruit's Drill Room, and in the other the School of Arms; Dressing rooms for both officers and men are also attached. According to another plan which may in some circumstances prove more convenient, the Gymnasium occupies the whole lower floor of one of the Wings of a full Company Barrack. These Gymnasias will form a very valuable addition to the means which the men enjoy of spending their time in a healthy amusement which adds to their bodily vigor and their efficiency as soldiers. During the cold season of 1867-68, running drill has been introduced and practised in many regiments, and in several the Medical Officer expresses his opinion that it has had a most beneficial effect on the health of the men.

393. In the Punjab the cattle slaughtered for rations have continued to be infected with cysts, but the monthly returns show that the disease has not prevailed to so great an extent as it did in the year previous. In several of the months it was confined to two, and sometimes to one station. Campbellpore, Nowshera and Sealkote have been those in which its appearance has been chiefly noted. Orders have been issued that "all carcasses slaughtered for the use of troops, which on examination, shall prove, whether before being tendered to the troops or at the ration stand, to be cyst-infected shall be destroyed." Instructions have also been issued enjoining the great importance of burying or otherwise disposing of the infected meat so that no dogs or other animals can get at it. No returns have been received, showing the comparative prevalence of tape worm among European Troops. The disease is not separately entered in the annual statistics, and even if it were the figures would give no clue to the number of cases, as they generally receive medicine without being admitted into hospital for treatment.

394. After a fair trial it has been determined finally to abandon the hill station of Parisnath as a sanitarium for British Troops. Parisnath consists of a range of hills in Lower Bengal (latitude 24° north, and longitude 85° east) having an elevation varying from 4,000 to 4,487 feet above the sea. The temperature is reported to be very equable, the range of the thermometer during the hot weather, and rains averaging 8° or between 70° and 78°. Although it cannot be compared in climate with the hill stations of the Himalaya, it was believed that it might prove advantageous to the soldiers quartered in Bengal Proper, being easy of access, and affording to weak and sickly men a climate vastly superior to that of the plains. The results, however, have not been satisfactory. Out of 32 men who arrived at Parisnath on the 26th April 1866, there had been 50 admissions, and five deaths by the end of July. With rapidly improving means of communication it appears in every way better to make use of the Himalayan valleys.

395. The question of the space which should be allowed to soldiers in health and invalids on board Indian coasting steamers has been reconsidered and the following rules have been sanctioned by the Government in supersession of all previous orders.

- I.—When European Troops are embarked on board Indian coasting steamers in which it is possible to carry out the regulation that one-third the number of men in health shall always be on watch on the upper deck, $7\frac{1}{2}$ superficial feet per man in health will be sufficient. But in cases where the system of watch may not be practicable each man in health will have a space of 12 superficial feet allotted to him.
- II.—Invalids, sick and women embarked on board such steamers are to have 15 superficial feet and children under 10 years $7\frac{1}{2}$ feet; children above 10 same as adults.
- III.—Should the constituted medical authority deem the full space of 22 feet requisite for cases of extreme sickness it should be provided.
- IV.—The best parts of the ship are to be appropriated for the sick generally, and effective men should not be allowed to occupy any of the space allotted to the sick.
- V.—A cabin or screened berth is to be set apart for use as a dispensary; an area of 22 square feet will suffice.

396. After consultation with the Inspector General of Hospitals and the Sanitary Commissioner a change has been made in the scale of diet allowed to prisoners under sentence by Court Martial, and the following has been promulgated by G. O. C. C. No. 91, dated 16th March 1868 in the room of that laid down in para. 73 of the regulations for Station Garrison and Regimental cells.

<i>Every day.</i>						
FOR BREAKFAST.	Salt	...	...	...	...	$\frac{1}{2}$ oz.
	Tea or coffee	...	...	...	...	1 pint.
	With milk	...	...	...	...	2 ozs.
	.. sugar	...	...	...	...	1 oz.
Bread, good ration sort						$\frac{1}{2}$ lb.
Evening meal same as for breakfast.						
<i>Sundays, Tuesdays and Fridays.</i>						
MID-DAY MEAL.	Good meat without bone*	...	...	...	...	$\frac{1}{2}$ lb.
	or with bone and made into soup	...	...	...	...	1 lb.
	With vegetables	..	...	...	...	10 ozs.
<i>Mondays and Thursdays.</i>						
MID-DAY MEAL.	Pease meal	...	...	...	...	9 ozs.
	Milk	...	...	...	...	$\frac{1}{2}$ pint.
<i>Wednesdays and Saturdays</i>						
MID-DAY MEAL.	Potatoes	...	...	...	...	$1\frac{1}{2}$ lb.
	Milk	...	...	...	...	$\frac{1}{2}$ pint.

As remarked by the Inspector General of Hospitals "there is no subject connected with the rationing of soldiers more difficult to solve practically than that of prison diet; for while it is not intended nor justifiable to pamper prisoners in the very least degree, the fact must never be lost sight of that a prisoner is if possible to be maintained in perfect health so that he may leave the prison fit for immediate duty."

397. The question of establishing Military prisons for India in which soldiers sentenced to long terms of imprisonment may be confined has also been under the consideration of the Government. The proper situation for these prisons, the size of the cells, day rooms, workshops, lavatories and latrines, the provision of hospitals with all their accessory accommodation, the proper scale of diet, the hours of labor, clothing and indeed all the hygienic aspects of the question have been reported upon by the Sanitary Commissioner.

398. One prominent feature of the sanitary administration of the Army during the year has been the regular submission of monthly reports by the Deputy Inspectors General of Her Majesty's British Forces on all points affecting the health of the Troops. These reports are framed on a very complete plan and embrace ample particulars regarding the space in barracks and hospital, the condition of latrines, and lavatories, the quality of the food and water, the extent of disease among the neighbouring population; and in fact on all matters calculated to influence the sanitary condition of the Army. As these reports are regularly submitted to the Government and conclude with recommendations on all points which require attention, an effective and speedy channel is provided by which any defects may be brought to notice and remedied with as little delay as possible.

399. Since last Report several Military stations, jails and cities have been inspected by the Sanitary Commissioner, and a report on the condition of each submitted to the Government. In this manner the Lawrence Military Asylum, the Fortress of Gwalior, the cantonments of Morar and Muttra, the city and jail at Muttra, the jail, city, and cantonment of Meerut have all been visited and reported on. As fully explained in the opening remarks, which were made on the occasion of the first inspections by the Sanitary Commissioner, the intention in these reports has not been to present any thing approaching to an exhaustive account of the sanitary condition of any of the places visited. Many cantonments are in a transition stage, the old arrangements are being supplanted by a new and better condition, but the change is not yet completed, although being carried out as quickly as circumstances will admit. In the same manner with cities. It is very easy to point out defects but to remedy them is a matter of no small difficulty. It is only of late that the attention of the authorities has been directed to this important subject, and that they have endeavored to enlist the sympathy and co-operation of the people in the reforms, which are so urgently wanted, and which can be carried out only through their assistance. Any sweeping condemnation of the existing condition of any of the large towns, for example, would only serve to damp the ardour of those, who have as yet but half awakened to the necessity of sanitary improvement. The object of the Commissioner has therefore been not so much to place any striking reports on record as to confer with the authorities both Civil and Military on the many important and difficult sanitary topics of the day, to shew their practical application to the wants of the different sections of the community, and to become acquainted with the varying circumstances of different portions of the country.

PART III.

NATIVE TROOPS.

400. The strength of the regular Native Army actually present throughout the year, has been 39,114, or nearly 2,000 men in excess of the average of either of the four preceding years. In March it attained a maximum of 41,606, and in June, when the absentees on furlough, or sick leave, are most numerous, a minimum of 37,038. The influence of these fluctuations in disturbing the vital statistics of Native troops has been repeatedly adverted to, but in examining the sanitary results of the year it cannot be too prominently borne in mind. To some extent the leave of absence on medical certificate which is granted to the Native soldiers is represented by the invaliding for change of climate which takes place in the European Army, but the latter occurs only once a year and does not extend to the same degree. In the British Army, out of an average strength of 33,784 during 1867, 1,090 were invalided for change of climate. The number of sepoys who obtained leave of absence to visit their homes on account of ill health during the year as detailed in Table XIV, amounted to 955 and in January, or at the most healthy season as shown in Table XIII, 525 were still absent on this account. Another source of error lies in the fact which is pointed out by Dr. Bryden in his note at the commencement of the Tables regarding Native troops, that certain outposts and detachments which are included in the strength furnish no records of sickness.

401. The total recorded mortality of the year among Native soldiers, as shown in Table XIII, has been 763 deaths. The average strength of the year may be taken at 45,500. This figure is obtained by striking the difference between the strength at the commencement and ending of the year, and adding the half of this to the former. This gives a total of 45,468, or in round numbers 45,500, which may be conveniently taken as the basis of calculation. The death-rate on this strength equals 16·77 per 1,000. Although this may be considered a very near approximation to the truth, it is more than probable, as suggested by Dr. Bryden, that the deaths occurring among absentees have in some instances been left unrecorded. Comparing the result with the total death-rate of the previous six years, as tabulated in last Annual Report, it appears that the mortality in the regular Native Army during 1867 has been slightly higher than it was in 1864, but less than that shewn in any other of those years.

402. Before proceeding to examine the details of sickness and mortality among the men who are included in Tables I to VII, it will be instructive to glance at the general gain and loss of regular Native Army during 1867.

changes which occurred throughout the whole regular Native Army as shewn XIII. Here the of the year are given, and the causes indicated. The strength which, on the 1st January 1867, amounted to 44,602, had, on the 31st December, increased to 46,326, or an addition of 1,724 men. Of the deaths, 206 occurred among men who were at the time absent either on furlough or sick leave; 779 men were invalided for discharge from the service, a loss proportionately larger than took place among European troops under the same head; but in making any comparison between invaliding among British and Native soldiers, it must be remembered that among the latter one chief cause of unfitness for further service is old age.

403. The extent of sickness throughout the Army cannot be ascertained with even the same approximation to accuracy as Amount of sickness. can be attained regarding the total deaths. Taking the men who were present with their Regiments, as shewn in Table I, the average number of daily sick has been 1834, or a ratio of 46 per 1,000. The maximum sick-rate was in October when it amounted to 71, and the minimum in May when it was 37 per 1,000. Divided according to groups, the daily average number of sick has been as follows:—

				1867.	1866.
				Per 1,000.	Per 1,000.
Bengal Proper and Assam	...	...	...	58	61
Dinapore, Benares, Oude, and Cawnpore	...	...	...	44	42
Meerut and Rohilcund	...	...	...	33	37
Agra and Central India	...	...	...	48	56
Punjab	...	...	...	45	34

As usual, the greatest amount of sickness has prevailed in Lower Bengal, and the least in the Upper Provinces. The additional column in which the ratios which were attained in the different groups during 1866 are entered, shews that, excepting the second and fifth groups, the results of the past year have been more favorable than those of the year previous.

404. Taking the different diseases which have chiefly contributed to the Chief forms of sickness. admissions into hospital throughout the Presidency, as shewn in the lower part of Table I, it appears that fevers occupy the most prominent place. Out of the total of 1,447 admissions per 1,000 from all causes, 743, or more than one-half, have been due to this class of disease. Next come dysentery and diarrhoea, which have jointly contributed 140 per 1,000: wounds and accidents, 131; abscesses and ulcers, 121; rheumatism, 63; and respiratory diseases, 35. The low figures assigned to venereal and hepatic diseases, 45 and 1·8 respectively, afford the most striking contrast to the causes of sickness among European troops. Compared with 1866, fevers have been somewhat more prevalent, so have bowel complaints; venereal affections have fallen 9 per 1,000. These figures do not include the large numbers of sepoys absent on medical certificate, and, as has been already explained, they do not, therefore, represent the total sickness of the year. Excepting acute diseases, such as cholera or small-pox, which do not

admit of the patient's removal, the returns shew an amount of sickness much under what has actually occurred.

405. The number of deaths which took place among men included in Table I, amounted to 511, or a ratio of 13·06 per 1,000. Compared with the six previous years, the death-rate has been higher than that of 1866, when it was only 11·98, but lower than what it was in any of the others. According to groups, the results have been as follow, compared with those of 1866 :—

	1867.	1866.
Bengal Proper and Assam	20·33	25·38
Dinapore, Benares, Oude, and Cawnpore	10·37	6·63
Meerut and Rohileund	10·75	7·49
Agra and Central India	6·93	7·58
Punjab	13·75	5·84

Excepting in the first and fourth groups, the death-rate of 1867 has been in excess of what it was in 1866. The increase is particularly marked in the Punjab, where it has more than doubled—a result in some measure, but by no means altogether, due to cholera.

406. Taken in the order in which they have proved fatal, the chief diseases stand thus :—

Chief causes of mortality.

Cholera	3·17
Fevers	3·04
Dysentery	1·05
Respiratory disease	·97
Diarrhoea	·72
Phthisis pulmonalis	·61
Wounds and accidents	·44
Atrophy and anaemia	·38
Spleen disease	·26
Heart disease	·26
Hepatitis	·23
Apoplexy	·23
Small-pox	·15
Scurvy	·15
Dropsy	·10
All other diseases	1·10
Died out of hospital	·20

The most important of these deserve separate consideration.

407. The extent to which cholera prevailed among Native soldiers during the past year, the remarkable immunity which they enjoyed compared with the European troops

Cholera in 1867.

occupying in many instances the same station, and the general distribution of the disease, have already been discussed in the first part of this Report. With a view, however, of rendering this section more complete in itself, it will not be out of place to state very shortly the main facts connected with the appearance and extent of the disease among the Native soldiery. Two hundred and forty-four cases of cholera occurred among them, of which 124, or 50·82 per cent. proved fatal. In 1866 there were 174 cases and 95 deaths from this disease.

but the places in which it appeared differed widely in the two years. The different groups shew the following results for 1867 and 1866 per 1,000 of average strength :—

	1867.		1866.	
	Admitted.	Died.	Admitted.	Died.
Bengal Proper and Assam	10·	4·56	13·2	7·03
Dinapore, Benares, Oude, and Cawnpore	3·8	2·73	1·7	·99
Meerut and Rohilcund	3·1	2·53	0·2	0
Agra and Central India	2·0	·91	0·7	0
Punjab	8·5	3·89	0	0

With a greatly diminished mortality from cholera in Bengal Proper and Assam, there has been a marked increase of the disease in all the other groups.

408. It will be remembered, in comparing the remarkable immunity which the Native soldiers enjoyed from cholera during 1867 with the very heavy losses sustained from this cause by European troops, that the statistics of a disease which runs its course so rapidly are not vitiated by the circumstances which affect the returns of many other diseases, and render any fair comparison between the results in the two bodies of men to a great extent impossible. The comparative and very marked immunity which the sepoys have enjoyed in all epidemic visitations of cholera in Upper India is a fact regarding which there is no doubt, and of which as yet no satisfactory explanation has been given. Two circumstances have been mentioned as perhaps in some measure accounting for the difference :—*1st*, that Native soldiers, as a rule, do not use latrines, and, *2nd*, that they do not occupy barracks. These two points have been already alluded to, and to some extent commented on, but since the earlier portion of this Report was sent to press, more precise information has been obtained in regard to them.

409. In the annexed Table are entered the stations occupied both by European and Native troops within the epidemic area, the extent to which the latter suffered from cholera, and the habits of the soldiers as respects whether they used latrines, or resorted to the jungles.

STATION.	Cases of cholera per 1,000 of strength among Native soldiers.	Use of latrines.	REMARKS.
Fyzabad	0	Used latrines.	
Lucknow	3·1	Latrines.	
Seetapore	8·5	Latrines.	
Allahabad	11·2	No information.	
Cawnpore	1·3	Latrines.	
Shajehanpore	24·2	No latrines.	
Bareilly	0	Latrines in part.	
Moradabad	13·1	No latrines.	
Meerut	0	Latrines very little used.	
Delhi	1·6	Latrines generally.	
Morar	1·8	Latrines.	
Umballa	6·4	Latrines to some extent.	
Jullundur	6·2	Latrines in part.	
Ferozepore	8·6	Latrines.	
Meeran Meer	9·8	Latrines.	
Kawul Pindie	2·0	No latrines.	
Peshawur	14·3	Generally latrines.	

At Deolie, where Native troops are alone quartered, and where that portion of them shewn in Table X suffered from cholera to the extent of 22 cases per 1,000, no latrines are in use. Although no very definite conclusion can be drawn from this Table, the facts recorded do not support the idea that the European troops may have suffered more from the disease because they were in the habit of using privies common to a considerable number of men. At several stations where the attacks were most numerous, the soldiers resorted to the jungles, while in others, when the disease appeared it did not spread, although latrines were in ordinary use.

410. In the last column of this Table it was proposed to add information regarding the other point of difference in the sanitary arrangements of British and Native soldiers, which has been suggested as a possible cause of the difference in the extent to which the two suffer from cholera; but details regarding the exact accommodation occupied by the latter cannot be obtained in time to admit of their being included in this Report. The houses in which Native soldiers live are indiscriminately termed "huts," but it appears that three-fourths of the lines, now in use in this Presidency, really consist of barracks large enough to contain a sub-division or section of a company in each. In any future epidemic of cholera, it is very desirable that full particulars should be given regarding the size and relative position of the huts of each Native Regiment which suffered from the disease.

411. During the year only 35 cases of small-pox were treated, of which six proved fatal. The admissions were in the proportion of 0·9, and the deaths of ·15 per 1,000. These figures are considerably below the average of previous years. In last Annual Report it was shown that between the years 1861 and 1866, the admission rate had fluctuated between 0·7 in 1862 and 3·2 in 1861, and the deaths from ·08 to ·56 per 1,000. The appearance of the disease according to season in 1867 followed the law which has been observed in other years. It was at its maximum in the spring, and during the months of August, September, October and November had entirely died out. The particulars regarding the distribution of small-pox are shown in Table XII. It will be observed that the 35 cases were spread over 15 stations, the greatest number occurring in any one place having been six. The same remark which has already been made with regard to the advisability of preserving a record in all cases of small-pox, showing whether the patient ever had the disease previously or had been inoculated or vaccinated, applies to Native soldiers equally with Europeans. Statistics founded on such data would afford very interesting and valuable information.

412. The number of cases of fever which were treated among Native soldiers was as usual very large, and as this is a form of disease on account of which sick leave is frequently granted, the figures inadequately represent the extreme prevalence of this class of diseases amongst the sepoys. Including the three varieties of intermittent, remittent and continued, 29,100 admissions from fever took

place during the year, or a ratio of 744 per 1,000, the death rate from the disease having been 3.04. Compared with the results of the previous six years, fevers have been less prevalent than they were in 1862 and 1863, and very much the same as in 1865. The death rate due to them has been lower than in any year except 1866. Taking the different groups separately, and comparing 1867 and 1866, the admissions per 1,000 have been as follow :—

	1867.	1866.
Bengal Proper and Assam ...	641	791
Dinapore, Benares, Oude, and Cawnpore	554	518
Meerut and Rohilcund ...	436	382
Agra and Central India ...	783	1,025
Punjab ..	1,031	689

In the last group there has been a marked increase, and on reference to Table X, it appears that this has been general throughout the province and not confined to any particular station. Comparing the results at the chief Military cantonments of the Punjab in 1866 and 1867, the admissions from fevers in each have been as follow :—

	1867.	1866.
Umballah ..	686	197
Jullundur ..	818	334
Ferozepore ..	475	268
Mooltan ..	477	357
Sealkote ..	118*	207
Umritsur ..	2,506	678†
Meean Meer ..	1,052	1,043
Rawul Pindee ..	356	362
Attock ..	587	819
Peshawur ..	1,690	1,064

The increase in many instances is very large. At Attock and Rawul Pindee the result for 1867 is more favorable than that for 1866, and this may be due in all probability to some exceptional circumstance which does not appear. In some stations fevers have been more prevalent than at any of those in the Punjab. At Berhampore they amounted to 1,859, and at Banda to 2,393 per 1,000. The extreme prevalence of fevers at this last-named station has been noticed in previous reports. Comparing the admissions from fevers according to months, it appears that the minimum of 1,060 occurred in February, and the maximum of 7,047 in October. This remark applies not only to the general results over the whole Army, but also to nearly all the groups taken separately. With regard to the different varieties of fevers and their comparative prevalence among European and Native soldiers, it is to be observed that while the cases of intermittent have been twice as numerous among the latter, the results as regards the other two forms are exactly the reverse. Of every 1,000 British soldiers 101 suffered from either remittent or continued fever, while of the same number of Natives only 13 were treated for these affections. The consequence is that while the admission rate from fevers as a whole among Native soldiers has been about what it was among Europeans, there is comparatively slight difference in the mortality assignable to these diseases among the two classes.

* Nine months.

† Ten months.

413. Of diarrhoea and dysentery, 5,526 cases were treated during the year, or a proportion of 140 per 1,000. The ratio is considerably under what it was in 1865, and slightly less than that shown in the returns of 1863. The statistics of several of the other years since 1860 are, however, more favorable than those of 1867. The death rate from this class of diseases during 1867 has, however, been only 1·77, which is the lowest ratio due to bowel complaints of which there is any record. The death rate under this head has fluctuated between 2·01 and 3·16. The ratios per 1,000 of admissions from diarrhoea and dysentery during 1867 and 1866 have been the following:—

	1867.	1866.
Bengal Proper and Assam ...	260	257
Dinapore, Benares, Oude and Cawnpore ...	97	71
Meerut and Rohilcund ...	99	67
Agra and Central India ...	102	90
Punjab ...	121	93

In each of the groups there has been an increase of the disease, and in some it has been considerable. Excepting at Attock and Peshawur, where the admission rate from bowel complaints reached 182 and 202 per 1,000, the prevalence of these diseases at particular stations has been chiefly confined to places in Bengal Proper. At Fort William, Berhampore and Dacca the ratio was high, and at Dum Dum and Alipore it attained its maximum of 521 and 530 per 1,000. As explained in last Annual Report this result appears to be due not so much to climate as to the change of diet adopted by sepoys recruited in Upper India and unaccustomed to the staple food of the Lower Provinces.

414. The admissions from venereal disease have always been very much less among Native than among European soldiers. Since 1861 the ratios of cases per 1,000 among the two classes have been as follow:—

	Native Soldiers.	European Soldiers.
1861	63	369
1862	59	318
1863	49	281
1864	49	254
1865	51	227
1866	54	217
1867	45	166

The contrast is very marked. The measures which have as yet been adopted to check the spread of venereal disease are not likely to influence the results as regards Native soldiers to the same extent as they have affected the returns of the disease among Europeans; still, even among the former, there has been some decrease in these affections. During 1867 as regards this class of disease there has been little difference in the ratio of admissions in the first four groups. In them the proportion of admissions per 1,000 has been respectively 55, 55, 51 and 57. In the Punjab, however, the number has been very much less, having amounted to only 24 per 1,000. In the individual

stations very marked differences appear in the relative prevalence of these affections. The maximum of 241 cases per 1,000 has been attained among a small body of men at Nowgong in Assam. At Berhampore the admission rate of 187 was also high. At many of the stations the ratios have been very small. At Ferozepore and Mooltan, for example, they were less than 10 per 1,000. It is very important, with a view of watching the effects of the introduction of lock hospitals, that the extent to which venereal affections have prevailed at the different stations in previous years should be recorded, and afford a means of ready reference. The details regarding Native soldiers can be ascertained only since 1864. During the last four years the admissions per 1,000 at the chief military cantonments have been as follow :—

STATIONS.	1864.	1865.	1866.	1867.
Fort William	60	76	45	52
Alipore	52	31	...	70
Dum Dum	...	...	...	41 (9 months).
Barrackpore	54	37	56	39
Berhampore	23	...	70	187
Dacca	25 (9 months)	8	47	75
Cherrapoonjee	31	96	48	50
Cachar	...	44	68	62
Nowgong	...	79	...	241
Gowhatty	19	...	39 (10 months)	43
Tezpor	38 (9 months)	...	52	28
Debrooghur (a local Regiment)	15	19	36	31
Julpigoree	20	...	34 (10 months)	47
Bhaugulpore	8	95	107	113
Dorundah	24	20 (11 months)	118 (8 months)	...
Dinapore	13	25	35	54
Segowlie	177	106	120	47
Benares	56	87	118	120
Goruckpore	41	67	114	78
Fyzabad	35 (7 months)	66 (10 months)	38	20
Lucknow	25	32	56	60
Seetapore	8 (9 months)	27 (7 months)	37 (9 months)	31
Cawnpore	38 (10 months)	40 (7 months)	78	47
Futteghur	...	...	119 (10 months)	81
Banda	33	34	29	36
Nagode	26	147	64	61
Allahabad	65 (10 months)	64	39	27
Shajehanpore	80	94	69	67
Barcilly	50	36	80 (10 months)	45
Deyrah	...	50	30 (11 months)	31
Roorkee	38 (9 months)	40	48	30
Almorah	78 (9 months)	69	91	129
Moradabad	74 (9 months)	36	87	41
Meerut	58	51	50	68
Allyghur	36 (9 months)	74 (8 months)	28 (8 months)	40
Delhi	43	39	26	16
Agra	80	64	109	79
Morar	71	89	57	57
Jhansie	74	43	51	35
Nowgong	49	64	101	80
Lullutpore	76 (11 months)	39	65 (11 months)	...
Jubbulpore	...	45	9	56
Deoles	100	64	95	72
Erinpoorah	...	28	0 (10 months)	66 (9 months).
Saugor	...	...	...	37
Umballah	77	50	58	22
Jullundur	34 (9 months)	26	13	84
Ferozepore	37	30	18	8
Unritsur	33 (9 months)	22 (9 months)	42 (10 months)	34
Dhurmsalla	41 (11 months)	15 (9 months)	...	21 (9 months).
Meean Meer	47	32	39	22
Mooltan	20	11	13	7
Sealkote	...	65 (10 months)	92	23 (9 months).
Rawul Pindce	46	48	40	28
Attock	...	34	51	47
Peshawur	50	44	37	20

In many stations in which venereal disease has greatly decreased among the European soldiers, there has been no corresponding decrease among the sepoys. At Lucknow and Meerut, for example, there has been a satisfactory diminution among the former, but the ratio of admissions among the latter has actually increased. The means directed to meet the evil among the one class have, it

appears, little influence among the other, and there is little doubt that the women with whom the Native soldiers consort are a distinct class and have not yet come under supervision.

415. The ratios of daily sick at the different stations are shown in Table X. Arranged in order of healthiness, Stations compared according to ratio of daily sick. according to this standard they are placed as follows : Sealkote and one or two others which were not occupied throughout the whole year have been omitted :—

No.	Name of Station.	Ratio of daily sick per 1,000.	No.	Name of Station.	Ratio of daily sick per 1,000.
1	Futtehghur	16	27	Benares	44.4
2	Ferozepore	20	28	Lucknow	44.6
3	Allyghur	24.4	29	Morar	45.4
4	Barcilly	24.9	30	Cachar	45.5
5	Agra	25	31	Roorkee	45.7
6	Fyzabad	26	32	Mecan Meer	46.8
7	Barrackpore	27.3	33	Loodianah	46.9
8	Mooltan	27.9	34	Almorah	47
9	Moradabad	28	35	Gowhatty	48
10	Shajehanpore	29	36	Jullundur	51.4
11	Umballah	30.9	37	Julpigoree	51.7
12	Bukloh	30.9	38	Buxa Dooar	54.1
13	Meerut	31.5	39	Debrooghur and outposts	54.8
14	Allahabad	31.9	40	Nowgong	56
15	Delhi	32	41	Dacca	59
16	Seetapore	34	42	Goruckpore	61.0
17	Nowgong (Assam)	34.5	43	Tezapore	61.3
18	Rawul Pindoe	34.6	44	Peshawur	61.2
19	Umritsur	34.7	45	Saugor	64.5
20	Cawnpore	36	46	Fort William	65
21	Cheerapoonjee and Shillong	37	47	Bhaugulpore	73
22	Jhansie	38	48	Berhampore	78
23	Dinapore	39	49	Segowlie	81
24	Attock	40	50	Alipore	83
25	Jubbulpore	42	51	Deolee	91
26	Nagode	44.1	52	Banda	100

416. Arranged according to the number of cases treated in hospital per 1,000 of average strength, the order of stations Comparison according to admissions. is shewn in the annexed statement :—

No.	Station.	Ratio of admissions per 1,000.	No.	Station.	Ratio of admissions per 1,000.
1	Fyzabad	475	27	Dinapore	1,258
2	Futtehghur	619	28	Attock	1,341
3	Moradabad	685	29	Nagode	1,349
4	Seetapore	779	30	Jhansie...	1,362
5	Shajehanpore	801	31	Goruckpore	1,364
6	Allyghur	822	32	Tezapore	1,420
7	Cheerapoonjee and Shillong	823	33	Gowhatty	1,491
8	Ferozepore	852	34	Benares	1,524
9	Agra	862	35	Julpigoree	1,532
10	Barrackpore	903	36	Saugor	1,603
11	Allahabad	901	37	Morar	1,625
12	Meerut	901	38	Nowgong (Assam)	1,655
13	Cawnpore	1,020	39	Jullundur	1,663
14	Buxa Dooar	1,021	40	Nowgong	1,680
15	Mooltan	1,035	41	Loodianah	1,695
16	Delhi	1,058	42	Mecan Meer	1,716
17	Cachar	1,070	43	Roorkee	1,746
18	Lucknow	1,070	44	Dacca	1,881
19	Jubbulpore	1,081	45	Alipore	1,991
20	Almorah	1,083	46	Debrooghur and Outposts	1,994
21	Umballah	1,086	47	Segowlie	2,003
22	Bukloh	1,092	48	Peshawur	2,300
23	Fort William	1,109.5	49	Deolee	2,641
24	Rawul Pindoe	1,109.8	50	Berhampore	2,864
25	Barcilly	1,132	51	Umritsur	2,986
26	Bhaugulpore	1,252	52	Banda	4,236

417. According to mortality the order is as follows :—

Comparison according to mortality.

No.	Station.	Ratio of deaths per 1,000.	No.	Station.	Ratio of deaths per 1,000.
1	Bukloh	2.58	26	Barrackpore	11.64
2	Jhansie	2.95	27	Cachar *	12.40
3	Banda	3.33	28	Debrooghur*	13.16
4	Segowlic	3.41	29	Allyghur*	13.33
5	Fyzabad	4.40	30	Julpigoree	13.41
6	Bareilly	4.53	31	Attock*	13.51
7	Nowgong	4.73	32	Umritsur*	13.89
8	{ Nagode	5.69	33	Shajehanpore*	14.49
	{ Agra	5.69	34	Loodianah*	15.62
9	Roorkee*	6.18	35	Almorah*	18.10
10	Dacca*	6.25	36	Dinapore*	18.78
11	Meerut	7.88	37	Tezapore*	18.87
12	Saugor	8.06	38	Deolee*	19.09
13	Morar*	8.25	39	Bhaugulpore	19.57
14	Ferozepore*	8.58	40	Peshawur*	20.02
15	Benares*	9.24	41	Dhurmsalla (9 months)	20.22
16	{ Mooltan*	9.62	42	Goruckpore	20.87
	{ Umballah*	9.62	43	Alipore*	21.34
17	Cawnpore*	10.05	44	Nowgong (Assam) *	23.00
18	Lucknow	10.06	45	Fort William*	27.78
19	Jullundur*	10.29	46	Buxa Dooar	28.65
20	Meean Meer*	10.57	47	Gowhatty	28.74
21	Rawul Pindee*	10.65	48	Moradabad*	28.80
22	Cherrapoonjee*	10.79	49	Berhampore	39.06
23	Futtehghur	10.87	50	Dum-Dum (9 months) *	41.86
24	Allahabad*	11.17			
25	{ Delhi*	11.33			
	{ Sectapore*	11.33			

An examination of these Tables sufficiently illustrates the difficulty of fixing any one standard by which the comparative salubrity of stations may be judged. Of this remark Banda is an excellent illustration. Here the daily ratio of sick was higher than at any other place occupied by Native troops during the year. In the proportion of admissions per 1,000, Banda presents by far the most unfavorable results, but taken according to relative mortality Banda stands third highest on the list. The disease in fact to which the sickness at this station was in great part due was a mild malarious fever, and while the cases were numerous the casualties were very few. Any attempt to classify stations according to relative salubrity, which is based merely on the comparative ratios of daily sick, is not only without value but leads to very serious error.

418. In the following statement the losses by death and invaliding in each Regiment are shewn separately and the different corps are arranged in the order of comparative

Comparison of Regiments.

* Stations at which one or more deaths were due to cholera,

mortality. In this return the deaths which occurred among men who were absent at their homes have been included so far as they could be ascertained, and the information is therefore more complete than that given in the stational and provincial tables. From one or two Corps the statistics of the year have not been received, and they are accordingly omitted. The Irregular Regiments of the Punjab and Central India Forces which have not yet been alluded to are included.

No.	Regiment.	Station.	Loss PER 1,000.	
			By death.	By invaliding.
1	Body Guard ...	Deyrah and Calcutta ...	...	23.07
2	6th Bengal Cavalry ...	Sealkote ...	2.62	20.94
3	12th Regiment Native Infantry ...	Jubbulpore... ..	3.37	21.88
4	4th Native Infantry ...	Jhansie ...	3.50	26.27
5	1st Punjab Infantry ...	Dera Ishmail Khan ...	3.59	8.90
6	1st Central India Horse... ..	Goonah ...	4.02	4.02
7	7th Bengal Cavalry ...	Lucknow ...	4.37	56.77
8	2nd Punjab Cavalry ...	Dera Ghazee Khan ...	4.76	11.90
9	2nd Central India Horse ...	Augur ...	6.08	6.08
10	11th Bengal Cavalry ...	Umballah ...	6.40	10.68
11	2nd Punjab Infantry ...	Abbottabad ...	6.51	27.69
12	14th Bengal Cavalry ...	Meerut ...	6.57	10.94
13	8th Ditto Ditto ...	Segowlie ...	6.62	66.22
14	Erinpoorah Irregular Force ...	Erinpoorah ...	7.04	8.22
15	4th Punjab Cavalry ...	Bunnoo ...	7.21	33.65
16	Hazarah Mountain Train ...	Abbottabad ...	7.35	7.35
17	5th Punjab Cavalry ...	Rajampore ...	7.35	19.61
18	15th Bengal Cavalry ...	Mooltan ...	7.48	24.94
19	10th Ditto Ditto ...	Saugor ...	8.02	26.74
20	41st Native Infantry ...	Agra ...	8.38	34.91
21	16th Ditto Ditto ...	Fyzabad ...	8.39	12.59
22	33rd Ditto Ditto ...	Morar ...	8.45	.....
23	16th Bengal Cavalry ...	Ditto ...	8.60	2.15
24	4th Goorkhas ...	Bukloh ...	8.66	4.33
25	22nd Native Infantry ...	Morar ...	8.76	26.28
26	8th Ditto Ditto ...	Bareilly ...	9.26	38.89
27	15th Ditto Ditto ...	Ferozepore ...	9.80	14.01
28	38th Ditto Ditto ...	Nagode ...	9.82	3.27
29	34th Ditto Ditto ...	Lucknow ...	10.25	5.86
30	No. 2 Field Battery ...	Kohat ...	10.31	61.86
31	Deolee Irregular Force... ..	Deolee ...	10.53	5.62
32	1st Bengal Cavalry ...	Nowgong and Jubbulpore ...	10.69	25.61
33	Malwa Bheel Corps ...	Sirdarpore ...	10.77	8.98
34	4th Bengal Cavalry ...	Bareilly ...	10.94	26.26
35	No. 1 Field Battery ...	Dera Ishmail Khan ...	11.11	22.23
36	4th Punjab Infantry ...	Ditto ...	11.31	24.23
37	7th Native Infantry ...	Allahabad ...	12.48	8.32
38	19th Bengal Cavalry ...	Peshawur ...	12.66	2.53
39	Meywar Bheel Corps ...	Kherwarrah ...	12.77	16.60
40	9th Bengal Cavalry ...	Meean Meer ...	13.14	4.38
41	35th Native Infantry ...	Saugor ...	13.29	5.91
42	40th Ditto Ditto ...	Nowgong and Banda ...	13.33	.....
43	5th Bengal Cavalry ...	Seetapore ...	13.33	24.44
44	Bhopal Battalion ...	Schore ...	13.89	15.43
45	10th Native Infantry ...	Mooltan ...	14.13	25.12
46	3rd Goorkhas ...	Almorah ...	14.24	24.22
47	19th Native Infantry ...	Allyghur ...	14.77	45.79
48	30th Ditto Ditto ...	Cawnpore ...	15.29	24.46
49	44th Ditto Ditto ...	Shillong ...	15.71	7.86
50	Guide Corps ...	Murdan ...	16.58	10.20
51	3rd Punjab Infantry ...	Bunnoo ...	16.69	4.55
52	14th Native Infantry ...	Benares ...	16.85	.....
53	5th Ditto Ditto ...	Dacca and Cachar ...	17.70	17.70
54	25th Ditto Ditto ...	Delhi ...	17.80	4.85
55	2nd Bengal Cavalry ...	Deolee ...	18.31	73.22
56	36th Native Infantry ...	Meerut ...	18.43	1.53
57	Nos. 4th and 5th Company Sappers	Peshawur ...	18.75	.....
58	42nd Native Infantry ...	Upper Assam ...	18.80	27.78
59	23rd Ditto Ditto ...	Peshawur ...	19.00	47.76
60	31st Ditto Ditto ...	Umballah ...	19.74	23.03
61	6th Ditto Ditto ...	Julpigoree ...	20.07	21.74
62	20th Ditto Ditto ...	Rawul Pindie ...	20.41	13.00
63	2nd Sikh Regiment ...	Dera Ghazee Khan ...	20.96	29.94
64	26th Regiment Native Infantry ...	Alipore ...	21.46	11.44
65	24th Ditto Ditto ...	Peshawur ...	21.48	7.16
66	1st Punjab Cavalry ...	Dera Ishmail Khan ...	21.74	26.57
67	3rd Native Infantry ...	Meean Meer ...	22.02	12.84
68	37th Ditto Ditto ...	Goruckpore ...	22.47	.....
69	18th Bengal Cavalry ...	Rawul Pindie ...	23.20	2.58
70	13th Native Infantry ...	Jullundur ...	23.25	29.07
71	4th Sikh Regiment ...	Dera Ghazee Khan ...	23.33	21.67
72	1st Sikh Regiment ...	Kohat ...	23.49	21.81
73	11th Native Infantry ...	Dinapore ...	24.01	38.14
74	39th Ditto Ditto ...	Lucknow ...	24.43	10.60
75	29th Ditto Ditto ...	Shujehanpore and Moradabad ...	24.81	13.95
76	Sappers and Miners ...	Roorkee ...	25.00	15.00
77	3rd Punjab Cavalry ...	Kohat ...	25.88	7.06

No.	REGIMENT.	STATION.	Loss PER 1,000.	
			By death.	By invaliding.
78	5th Goorkhas	Abbottabad	25.93	17.84
79	17th Native Infantry	Barrackpore	25.95	24.43
80	28th Ditto Ditto	Peshawur	26.62	4.42
81	2nd Goorkhas	Rawul Pindee	26.64	22.35
82	6th Punjab Infantry	Kohat	26.69	4.21
83	17th Bengal Cavalry	Barrackpore	27.37	10.53
84	43rd Native Infantry	Tezporé and Gowhatty	28.17	.....
85	5th Punjab Infantry	Bunnoo	28.67	5.06
86	13th Bengal Cavalry	Peshawur	29.36	4.28
87	Detachment 18th Native Infantry	Berhampore	30.30	.....
88	32nd Native Infantry	Buxa Dooar	32.62	.....
89	2nd Ditto Ditto	Alipore	32.81	21.88
90	45th Ditto Ditto	Peshawur	32.86	17.21
91	3rd Bengal Cavalry	Ditto	33.84	15.67
92	9th Native Infantry	Fort William	37.09	69.73
93	1st Goorkhas	Dhumsallah	38.23	15.29
94	27th Native Infantry	Peshawur	39.30	7.86
95	18th Ditto Ditto	Bhaugulpore	39.82	37.28
96	1st Ditto Ditto	Dum-Dum	42.98	45.84
97	No. 3 Field Battery	Bunnoo	44.44	33.33
98	3rd Sikh Regiment	Kohat	46.55	12.07
99	No. 4 Garrison Company	Ditto	56.00	132.07

419. The mortality and invaliding in the Regiments of the Central India and Punjab Irregular Forces are given in the preceding statement. The statistics of the groups which they severally form will be found in Tables VIII and IX. Taking only the men present with their corps, the mortality in the first group has equalled only 5.46 per 1,000. If the whole strength and the deaths recorded among absent soldiers be taken into consideration, the ratio amounts to only 8.92. Both results are much more favorable than those which obtained among the men of the Regular Native Army. Of the total of 23 deaths, the causes of which have been recorded, seven occurred from respiratory diseases, six from fevers, and three from cholera. Other diseases contributed but one casualty under each head. The ratio of admissions also bears very favorable comparison with that shown in Table I, the total in the one case having amounted to only 1,094 per 1,000, while in the other it was 1,417. The difference is not due to comparative immunity from any particular disease, for, with three exceptions, all diseases have been less prevalent among the men of the Central India group than among those of the regular Native Army. The three exceptions are hepatitis, venereal diseases, and eye diseases, and from each of these the admission rate has been somewhat higher in the Regiments of Central India. Taken individually as shown in the last division of Table XIV, these corps present very different results, the death rate having varied from 4.02 to 13.89. It will be observed that the total ratio of mortality given in this Table does not correspond with either of those already mentioned. The discrepancies are explained in Dr. Bryden's foot-notes.

420. In the Punjab Irregular Force, the strength of which has averaged 9,135 during 1867, the number of daily sick has averaged 36, and the admissions have been 1,395 per 1,000. In the fifth group of the regular Native Army, which affords the best means of comparison, the daily sick equalled 45 and the admissions 1,645. Intermittent fevers and bowel complaints have been much less prevalent in the Irregular Force, but on the other hand cases of cholera, small-pox, the severer forms of fever, respiratory diseases, venereal diseases and ulcers were more frequent. As regards mortality the ratio of deaths which place with Regiments, equalled 12.37 among the Punjab Irregular Force; including all casualties, it amounted to 15.50.

PART IV.

JAILS.

421. During 1867 the daily number of prisoners throughout the Bengal Presidency has averaged 54,962, or nearly 2,500 less than in 1866. This is still somewhat in excess of the strength for 1865. A diminution has taken place in each group, but it has been most marked in Bengal Proper.

The comparative numbers in 1866 and 1867 were as follow:—

	1867.	1866.
Bengal Proper	15,692	16,794
Behar, Benares, and Oude	16,940	17,088
Nagpore and Central India	4,421	4,956
Rohilcund, Meerut, and Agra	7,403	7,787
Punjab	10,506	10,697
TOTAL	54,962	57,322

In the third group the prison population has been smaller than in any year since 1858. In the fourth group it has been less than that of any year since 1859.

422. Out of the total number of prisoners, 1,773 were, on an average, sick every day throughout the year, or a ratio of 32 per 1,000. Compared with the results of each year since 1859, the statement of sickness stands thus. Particulars regarding the extent of mortality and the proportion of deaths which has been due to Cholera may also be given at the same time.

Year.	PER 1,000 OF AVERAGE STRENGTH.			
	Daily sick.	Admissions.	Deaths from Cholera.	Deaths from all causes.
1859	52	1336	8.58	82.77
1860	57	1491	21.66	110.81
1861	48	1314	15.21	96.65
1862	46	1346	5.52	66.75
1863	48	1368	14.33	85.84
1864	41	1227	8.56	69.60
1865	35	1154	7.19	57.66
1866	33	1133	12.10	61.94
1867	32	1079	4.93	38.32

As regards sickness, the results of 1867, therefore, bear favorable comparison with those of the previous years of which there is any record. The daily

average number of sick has maintained a lower proportion than in any of them. The ratio of admissions is also most favorable. It is not a little remarkable that the ratio of daily sick and the ratio of admissions among the prisoners have both been considerably lower than among the Native soldiers. Among the latter, as has been already seen, the proportion of daily sick was 46 and the admissions 1447 per 1,000.

423. Compared with the past the death-rate of the year is even more favorable than the diminution in sickness. The mortality of 1867 has equalled 38·32, or nearly 24 per 1,000, less than the ratio of 1866 and 72·49 less than that of 1860. Both in the Meerut and Punjab groups, owing in some measure to the presence of cholera, from which both had been almost entirely free during 1866, the death-rate of the past year has been considerably higher than that of the year previous. In Bengal Proper, the ratio for 1867 stands very much as it was for 1865. The great reduction in the death-rate as a whole during 1867, has been chiefly due to the very favorable results in Oude and Central India. In the former of these groups, the death-rate has been 36·72, compared with 67 in 1864, 67 in 1865, and 62 in 1866. In the latter the ratio has been 36·42 compared with 51 in 1864, 104 in 1865, and 65 in 1866.

424. The greatest number of admissions into hospital, and the highest ratio of sickness, occurred in the month of September. Chief causes of sickness. The smallest number of admissions took place in February, and the proportion of daily sick reached its lowest in the same month. Arranged according to the number of cases of each which were treated per 1,000 of strength, the different diseases stand as follow. For convenient reference, the proportion of admissions among Native Troops from the same causes are also given.

	<i>Prisoners.</i>	<i>Native Troops.</i>
Fevers	... 468	743
Bowel complaints	... 198	140
Abscess and ulcers	... 119	121
Wounds and accidents	... 41	131
Respiratory diseases	... 33	35
Rheumatism	... 24	63
Venereal diseases	... 23	45
Eye diseases	... 15	24
Cholera	... 11	6
Atrophy and anæmia	... 9	0
Spleen disease	... 8	8
Phthisis pulmonalis	... 3	1
Dropsy	... 3	0·6
Scurvy	... 3	1·7
Small pox	... 2	0·9
Hepatitis	... 1	1
Other causes	... 112	119

It is very remarkable that excepting Bowel complaints the proportion of cases of all the chief diseases among sepoys has been greater than among prisoners. This is particularly note-worthy as regards fevers, from which the Native

troops have suffered to an extent not far from double that which has prevailed amongst the prisoners. The contrast is all the more singular when it is remembered that the prisoners are of all ages, often weak, and in feeble health, while the Native soldiers are, to a great extent, picked men, and as a rule, able-bodied. Moreover, as has been already explained, owing to the large number sent away on medical certificate, the amount of sickness amongst the latter is always understated. The contrast in the admissions from fevers is so marked as to lend no small strength to the opinion that high walls have a protective influence against malaria.

425. As the stations at which the jails are situated differ very widely from those occupied by Native troops, a source of error is apt to arise in any comparison of the extent of malarious disease among the two bodies taken as a whole. But no such fallacy can arise if the statistics of those at the same stations be separated. In the following statement the results at the chief stations are compared for the last three years.

					ADMISSIONS FROM FEVERS PER 1,000 OF AVERAGE STRENGTH.					
					1865.		1866.		1867.	
					Prisoners.	Native Troops.	Prisoners.	Native Troops.	Prisoners.	Native Troops.
Alipore	...	...	...	...	1,314	1,180	1,069	Not given separately.	700	872
Dacca	...	...	...	...	630	817	389	1,020	411	1,003
Bhaugulpore	...	...	...	...	495	1,357	651	573	504	406
Dinapore and Deegah	...	...	...	...	320	829	123	523	211	472
Benares	...	...	...	...	269	658	376	376	266	530
Goruckpore	...	...	...	...	335	571	189	138	121	889
Lucknow	...	...	...	...	195	443	691	358	81	307
Banda	...	...	...	...	539	2,411	590	2,529	529	2,393
Cawnpore	...	...	...	...	377	460 (7 months.)	294	441	356	427
Allahabad	...	...	...	...	374	432	350	531	222	358
Shajchanpore	...	...	...	...	125	590	153	226	216	299
Bareilly	...	...	...	...	505	1,162	351	410 (10 months.)	392	389
Moradabad	...	...	...	...	160	252	211	345	188	238
Meerut	...	...	...	...	129	608	156	391	198	421
Delhi	...	...	...	...	1,053	432	812	335	1,202	635
Agra	...	...	...	...	99	437	51	385	76	223
Umballa	...	...	...	...	438	281	978	197	351	686
Jullundur	...	...	...	...	571	660	88	341	138	818
Ferozepore	...	...	...	...	2	274	40	268	113	475
Mooltan	...	...	...	...	109	601	109	357	177	477
Sealkote	...	...	...	...	188	229 (10 months.)	157	207	343	118 (9) months.
Meean Meer and Lahore	...	...	...	...	697	793	863	1,013	797	1,052
Rawul Pindee	...	...	...	...	673	286	799	362	844	356
Peshawur	...	...	...	...	1,530	1,060	397	1,061	1,775	1,790

Comparison cannot be made as regards all the stations. Very many of those at which there are jails have no native garrison and others are occupied by native soldiers belonging to a different Presidency, the Returns from which do not reach this office. The results shewn at the twenty-four different places given in the above statement are striking. In the year 1865 at only 5 of them—Alipore, Delhi, Umballa, Rawul Pindee and Peshawur, were the admissions from fever among the prisoners in excess of those among the sepoys, and of these Umballa and Peshawur offer no fair comparison, as the fever prevalent in these jails was not of the ordinary malarious character, but a contagious disease of an entirely different nature. Alipore, Delhi and Rawul Pindee therefore remain as the only

places at which the prisoners in 1865 suffered more from malarious fever than the native soldiers. In the other nineteen jails, regarding which a fair comparison can be made, the statistics are in favor of the prisoners. In many of them the difference is very marked, for example at Bhaugulpore, Lucknow, Shajehannpore, Meerut, Agra, Ferozepore and Mooltan. In 1866 the results were very much the same. Here the Lucknow and Umballa Jails must be omitted on account of the epidemic of contagious fever which prevailed in them and the statistics of the Native troops at Alipore are mixed up with those of Fort William. There therefore remain only twenty-one places on the list in which comparison can be made between the convict population and the Native soldiery. At only four of these were the admissions from fever among the prisoners in larger proportion than among the sepoys; they are Bhaugulpore, Goruckpore, Delhi, and Rawul Pindee. At the other seventeen the results were much more favorable in the jails; in several instances very strikingly so, as at Meerut, Agra, Jullundur, Ferozepore and Peshawur. During 1867 not including Sealkote which the Native troops occupied for only portion of the year, the results are again very favorable to the prisoners. At all the places excepting Bhaugulpore, Delhi and Rawul Pindee the proportion of admissions from fever among them was less, and as a rule much less, than among the native troops. It will be observed that in each of the three years of which comparison has been made, the Delhi and Rawul Pindee Jails uniformly shew a larger ratio of fever cases than among the Native troops stationed at these places. An inquiry into local circumstances might perhaps explain these results. There remains the fact that as a general rule the prison population suffers from malarious fever to a very much smaller degree than native soldiers.

426. In some respects the comparison is not complete. The prison population is to a great extent stationary, while
 Different circumstances of prisoners and native soldiers. Regiments move from one cantonment to another, and in healthy places frequently continue to suffer from the unhealthy influences to which they have been exposed elsewhere. Again in a malarious district new arrivals are apt to suffer more from fevers than the older residents. This appears to be one cause of the marked difference shewn at Banda, where the admissions from fevers among the prisoners during the last three years have averaged 552 per 1000 and 2444 among the native soldiers. Allusion has already been made to the marked differences in the age and physique of the two classes, and to the fact that the one are lodged within high inclosing walls while the others occupy huts or barracks on the open plain. The prisoner is forced to work much harder than the sepoy, and is often exposed to both heat and rain, on the other hand he has no night duty and is obliged to sleep under cover. The subject requires further investigation, and it is well worth the attention and study of Medical Officers in charge of Jails and Native Troops.

427. The death rate among the prisoners throughout the Bengal Presidency in 1865, as has been already stated, presents a most favorable contrast to the results of any previous
 Chief causes of mortality.

year. Of the total mortality of 38.32 per 1000 the different diseases have contributed the following proportions—

	1867.	1866.
Bowel complaints ..	15.23	23.25
Cholera ..	4.93	12.10
Fevers ..	4.82	11.53
Respiratory diseases ..	3.31	3.00
Atrophy and anemia ..	2.22	3.35
Phthisis pulmonalis ..	1.86	1.55
Dropsy ..	.87	1.29
Apoplexy ..	.46	.56
Wounds and accidents ..	.46	.99
Spleen disease ..	.40	.39
Hepatitis ..	.40	.30
Heart disease ..	.26	.30
Small pox ..	.18	.26
Scurvy ..	.17	.11
All other causes ..	2.75	2.96

The comparison between the mortality of 1867 and 1866, which is also given above, is very favourable to the latter. Under all the great causes of death the diminished ratio during the past year is very marked.

428. Full particulars regarding the extent to which the prisoners suffered from cholera and the very remarkable immunity which they preserved in Northern India over the very large area covered by a severe epidemic have been already detailed in the first part of this Report. The facts need not be recapitulated here, nor is it necessary any further to discuss the causes to which the remarkable escape of the prison population as a body appears to have been due. The measures which ought to be adopted in any future outbreak of the disease and in those portions of the country in which it is a more or less constant visitor, have already been considered.

429. Bowel complaints have as usual been both prevalent and fatal. Ten thousand nine hundred and twenty nine cases of dysentery and diarrhoea have been treated during the year and of these 837 proved fatal. The admission rate of 198 and the death rate of 15.23 per 1,000 from these two diseases, high as they are, offer a very favorable comparison with the returns of previous years. Between 1859 and 1866, the ratio of admissions from these causes has fluctuated between 297 in 1860, and 205 in 1866, while the death rate has varied from 41.17 in 1860, to 23.21 in 1865. Taking the results in the different groups separately, the highest ratios both of admissions and deaths from bowel complaints have been in Bengal Proper. Here 314 cases were treated per 1,000 and the death rate was nearly 22. Although this is high the mortality is somewhat less than in 1865, and very much less than in any other year since 1859. In the second group the proportion of admissions from dysentery and diarrhoea is somewhat greater than in 1866, but the death rate is 17.36 compared with 21 in that year; between 1859, and 1866, the death rate

434. In the Shahpore Jail only one death occurred from fever during 1867. But the circumstances under which the disease appeared are interesting, and the benefits which resulted from quarantine are strikingly illustrated. Dr. Cookson thus describes them—"The Shahpore Jail has of late years been singularly healthy, and at the close of 1866 no casualty had occurred for upwards of three years. In 1866, in the Shahpore, as in other Punjab Jails, a quarantine ward was established, in which recently convicted prisoners were detained for twenty one days before they were allowed to mix with the general prison population. On January 11th 1867, on inspecting the prisoners in quarantine, I found Gul Jehania (No. 2317 on the jail register) suffering from symptoms of continued fever; he was removed from the jail the same day, and died comatose on the 16th January. He was intensely jaundiced three days before death. On the 4th February, Sultan, No. 2320, on the 7th February, Dadoo, No. 2327, and on the 11th February, Biaddoo, No. 2328, all young men who had been in the quarantine with Gul Jehania, were attacked; it was before suspected, and now became manifest, that we had got relapsing fever into the jail. These men were removed to an airy building outside the jail. No further cases occurred in the jail, but Jumal, No. 1983, in attendance upon the above three men, was attacked on the 25th February. All these men recovered; three were jaundiced, two had bleeding from the nose, three had one relapse, and one had two relapses. Gul Jehania, the first case, was sentenced on the 7th January, four days before his attack; he had been implicated in a riot, and from 26th December to the 7th January had been an inmate of the dispensary on account of a contused wound of the head. He was a powerful well-fed young man from the town of Gerowt, in the Shahpore district. I was afterwards able to ascertain that one, if not two, cases of relapsing fever occurred in Gerowt, one in a stranger who was very ill from fever, with bleeding from the nose, early in December, and the other case, which I saw myself, occurred early in February. Here we have a clear history of the introduction of relapsing fever from without. The advantage of a quarantine is shewn, and also that it would be advisable to prolong detention in quarantine to a month."

435. Peshawur, Rawul Pindie, and Shahpore were the only jails in the Punjab at which this peculiar fever appeared during the past year. In the North Western and Central Provinces, not a single case occurred among the prisoners. In Oude it was confined to Gondah. The prisoners in this jail, as narrated in last annual Report, suffered from contagious fever in 1866. The history of the epidemic during 1867 is thus narrated by Dr. Sutherland the Sanitary Commissioner for Oude.

"A fever," he writes, "reappeared in the Gondah Jail towards the end of 1867, and was supposed by Dr. Condon, at first, to be identical with the fever of 1866, which he still believes to have been non-contagious and to have originated in exposure to the sun. Early in December, after several fatal cases had occurred and jaundice was observed as a prominent symptom, he became convinced that he had the contagious continued fever of Indian Jails to deal with,

and adopted measures to prevent its spread by evacuating the infected barracks and establishing quarantine. It appears, however, either that the disease had already infected a large portion of the jail, or that the measures taken to isolate the non-infected were incomplete, because upwards of three months elapsed after the date of the first barrack being emptied before the epidemic showed any decided decrease."

Table 12.—Gondah Jail.

					Average strength.	Deaths.	Deaths to strength. per cent per annum.
January 1867	...	...	...	...	881.03	2	2.71
February "	...	...	...	...	853.39	1	1.38
March "	...	...	...	...	814.12	1	1.41
April "	...	...	...	...	825.70	3	4.39
May "	...	...	...	...	819.83	3	4.25
June "	...	...	...	...	811.40	1	1.46
July "	...	...	...	...	824.83	0	0
August "	...	...	...	...	780.51	0	0
September "	...	...	...	...	776.33	1	1.58
October "	...	...	...	...	761.93	3	4.60
November "	...	...	...	...	746.66	3	4.88
December "	...	...	...	...	717.48	27	41.39
January 1868	...	...	...	...	710.	28	47.
February "	...	...	...	...	669.	29	54.
March "	...	...	...	...	615.	19	36.
April "	...	...	...	...	581.	5	10.

"Table 12 shows that the jail was remarkably healthy during the year until December, the average rate of mortality during 11 months having been only 2.42 per cent of strength per annum. The death rate suddenly rose to 44 per cent of strength per annum and continued at nearly the same rate in January, February and March, then suddenly fell in April to 10.

The only question in regard to the nature of the fever which arose was, whether it might not possibly be the fever described by old authors as "bilious remittent" of local or climatal origin, produced by malaria of the same nature as that which causes intermittent fever, acting more powerfully.

At first the season of the year and the malarious character of the Transgogra district seemed to favor this idea, but the sudden rise and rapid spread of the fever, its very fatal nature, its restriction to certain bodies of men, the healthy condition of the general community of Gondah, and of the

prisoners in the Baraich Jail in a similar climate, soon proved it to be the epidemic fever of Indian Jails so much written about, and most recently with reference to the Rangoon Jail in the Burmah Report of 1866-67.

Dr. Condon is very strongly of opinion that the Gondah fever of 1867 is identical with the "Febris Recurrens" described by European medical writers and that it is powerfully contagious.

Comparing its symptoms with those enumerated at page 27 of my Report on the Oudh Jails for 1866, he found all the ordinary symptoms described in para. 130 present, except vomiting, but the relapse was not so constant or so punctual in the occurrence as usual. Of the sequels (para. 131), the most frequent was a bloody discharge from the bowels usually consequent on the jaundice, and generally fatal ophthalmia was not observed.

Among the fatal symptoms delirium was as a rule during the course of the disease absent, but a comatose state was frequent towards the close of fatal cases. Enlargement of the liver was particularly noticed as a frequent post-mortem symptom, and, to a less degree, enlargement of the spleen.

I inspected the Gondah Jail three times during the course of the fever and saw a good deal of the disease. The great frequency of intense jaundice was the most remarkable symptom.

It was present in all of several cases which proved fatal during my visits. The absence of delirium was peculiar, and extreme emaciation was very marked.

The reports of my inspections and correspondence on the subject are attached to show that the contagious nature of the disease was strongly insisted upon and measures adopted accordingly, which, although for some time apparently ineffectual, have ultimately been successful in eradicating the disease.

The history of this epidemic is very instructive and teaches the urgent importance of promptly and carefully isolating any cases of continued fever, the nature of which is not otherwise explained, especially if accompanied by jaundice,—being one of the several instances in which this insidious fever has made its way into jails unsuspected until its fatal poison had infected a whole body of men, so that its effects continued for months."

436. With reference to the history of these epidemics the same questions arise as have been discussed in previous reports. To what causes was the disease due? Did it originate within these jails owing to overcrowding, insufficient nourishment, want of proper clothing, or defective sanitary arrangements—or was it imported from without? Although much has been written to prove that this peculiar fever has been originated among the prisoners *de novo* from one or other of the causes above mentioned, no single fact has yet been adduced in support of this opinion. The facts of 1867, in connection with the appearance of the disease, only serve with singular force to corroborate the views which have

been so repeatedly expressed by the Sanitary Commission. The subject is one of very great practical importance, and the real dangers connected with the appearance of this disease among prisoners cannot be too strongly impressed on all officers in charge of jails. The question of what name ought to be given to the disease has occupied much attention, but the discussion has thrown no light whatever on its origin. While Medical Officers have been considering this difficulty they have, in too many cases, failed to grapple with the real danger of its appearance among a large body of men,—the danger which arises from its highly contagious nature, and against which precautionary measures are required without delay.

437. As regards food and clothing the prisoners in the Punjab are all subject to very much the same conditions. If these conditions are sufficient to create a specific fever, it is very remarkable that out of the thirty jails in the province only three were attacked with the disease. But it may be alleged that the result was due to overcrowding. In the Peshawur Jail each prisoner, on an average, had 30 superficial feet of space. In the Rawul Pindee Jail 39, and in the Shahpore Jail 55. It has already been remarked that, in the opinion of the Deputy Inspector General of Hospitals, overcrowding in the Peshawur Jail converted a malarious intermittent into a contagious fever. It is, however, to be observed that in 1866 the average number of prisoners in that jail exceeded the number in 1867, and yet there was no contagious fever. In one year the death rate was 19·18, and in the other 123·15 per 1,000. If overcrowding were sufficient to produce such lamentable results in the past year, it is very remarkable that, with even a greater amount of overcrowding, the health of the prisoners in the year previous should have been so good.

438. In the Gondah Jail it is even more difficult to find any conditions under which the prisoners were placed, which will explain the origin of the disease within the walls. The convict population in the jails of Oude is all fed and clothed alike, and yet this fever was confined to one jail. So far from there having been any overcrowding in this jail the superficial space allowed per head was greater in it than in other prisons of the province. Dr. Sutherland's testimony on this subject is very conclusive.

“The average strength of the Gondah Jail in 1866 was 935 with an average space of 50 superficial feet of floor space to each prisoner, and in 1867 the average strength was 799 with 58 superficial feet of floor to each. Moreover the accommodation consisted chiefly of the abandoned European barracks built in 1860, with ample lateral ventilation. The Deputy Inspector General of Hospitals was of opinion, when the last epidemic of contagious fever broke out in November 1867, that the ventilation was excessive. I believe that overcrowding had no share in the origin of this epidemic; but that having been introduced, the disease spread from the infected to other occupants of the same barracks whether overcrowded or not. All the other jails in Oude were more crowded. In none was the average floor space above 36 superficial feet per prisoner, and in several of the smaller jails it was unavoidably less, although constant transfers were made to relieve them. I am inclined to suspect that this fever at Gondah may have been imported from Nepal by travellers in the cold season.”

439. These facts sufficiently shew that the disease did not originate in the Gondah Jail, from overcrowding; nor is there any good reason to suppose that, in any other epidemic the appearance of contagious fever has been due to such a cause. Two years ago Dr. Mouat expressed his opinion that it was caused by the practice which he said prevailed in the Upper Provinces of burying ordure in the jail gardens. No facts were adduced in support of this statement, and the special reports which have been prepared on the subject by the Inspector General of Prisons in the North-Western Provinces, and the Sanitary Commissioner in the Punjab, shew conclusively that it altogether fails to account for the appearance of the disease.

Was the disease due to improper sanitary conditions in the North-Western Provinces?

"Prior to," writes Dr. Clark, "and during the time the contagious fever prevailed in the Agra Central Prison, the extent of garden ground cultivated inside the walls was comparatively small. Moreover, with the exception of what was required for manure, the whole of the ordure was buried in pits at a considerable distance from the prison, a work in which a large gang of prisoners and a number of bullocks were constantly employed. At Meerut, where the fever raged with even greater force than at Agra, no cultivation has ever been carried on inside the prison walls, and the garden is separated from the prison by a clear, open, uncultivated belt of land. At Bareilly the same arrangements exist as at Meerut, and the garden is at least a quarter of a mile from the nearest point of the main wall. At Allahabad the garden is separated from the prison by an open uncultivated plain of some extent. At Benares the garden is situated in an open space outside the main wall of the prison. At Goruckpore the garden, until lately, was at a considerable distance from the outer wall of the jail. In short, with few exceptions, the gardens of the jails in these provinces are outside the jail walls, and wherever they are not so situated the custom has been, and still is, to use ordure as manure only, the surplus quantity being buried in pits or trenches at a distance from the jail.

It will be gathered from the foregoing facts that several of the jails in which the fever appeared in a most virulent form, never had ordure buried or used in any form within their walls; that Doctor Mouat had no grounds for the assertion alluded to in the extract from the Resolution of the Government of India in the Home Department, No. 408, dated the 5th instant, forwarded with your letter under reference, and that the prevalence of the fever in the jails of these provinces had no connection whatever with the disposal of the jail sewage."

The mode of disposing of the sewage in the jails of the North-Western Provinces appears to have been very much the same as that adopted in Bengal where the disease had not been known among the prisoners.

440. In Bengal it appears from Dr. Mouat's letter quoted by Dr. DeRenzy that as regards the spot to which the excreta were removed "no exact distance was prescribed. The nearest piece of waste land was selected that was not surrounded by human habitations and that was generally found at a few hundred yards or less." In the Punjab a precisely similar system prevailed. "In the Lahore Central Jail," writes Dr. DeRenzy, "the filthpits were from 400 to 800 yards from the nearest barrack. In Rawul Pindie the distance was 292 yards. In Mooltan it was about the same, and in all other Punjab Jails the filthpits were well removed

Evidence from the Punjab.

from the barracks, and in none of them was any offensive smell ever perceptible. Rawul Pindee was one of the first jails attacked, and the Lahore, Central and Mooltan Jails suffered most severely."

"Before the discovery of Mr. Moule's dry earth system," continues Dr. DeRenzy, "night soil was, I presume, buried undeodorised in Bengal just as it was in the Punjab." It is certain then, that if the Bengal Jails have remained free of contagious fever, they do not owe their exemption to any peculiarity in their mode of disposal of night soil, nor to the fact of the excreta being removed to a greater distance than was done in the Punjab. Dr. Mouat holds that the condition necessary to render the remittent fevers of the Punjab contagious was most probably the noxious exhalations from the large amount of putrefying excreta buried in the jail gardens. But the epidemic at Mooltan is not to be accounted for on this hypothesis, for the simple reason that there was no large accumulation at all. The natives of that district know the value of night soil as manure; and, after lying for a few months in the pits, the jail excreta were employed for this purpose in the garden or sold to cultivators in the vicinity when the quantity in hand was in excess of jail requirements. The luxuriant crops, for which the garden was and is famous, were the produce of night soil used as manure. Dr. Mouat states "that the cessation of this contagious fever in the North-Western Provinces and the Punjab is due entirely to the thorough deodorisation of all ordure that is now practiced; and I am certain that, although adynamic fevers may occur occasionally in an endemic form, they will never become contagious so long as the present conservancy arrangements be obtained." Actual experience has unfortunately already falsified this prediction. In 1866 the fever appeared with all its former virulence in the Umballa Jail, and caused 48 deaths out of a strength of 698 convicts, and last year it appeared in the Peshawur and Rawul Pindee Jails. Nowhere, I venture to say, is the dry earth system carried out to greater perfection than in the Punjab Jails; but the fact remains that, in spite of the most thorough deodorisation of excreta, the contagiousness of jail fever continues unchanged."

441. As regards the general evidence of importation in the Punjab, Dr. DeRenzy furnishes the following interesting particulars:—

General evidence of importation in the Punjab.

"Dr. Mouat does not consider the evidence as to its having been always imported, and never to have originated in the jails themselves, satisfactory. Very eminent authorities hold that contagious diseases never are generated *de novo*, but whatever may be thought on this subject, every one admits that, as a rule, they spread by the communication of a specific poison from the infected to the healthy, and therefore, in the absence of facts which exclude an origin by contagion, and render spontaneous generation at least probable, we are bound to act on the belief that contagious diseases, whenever and wherever they appear, have the usual mode of origin. How rarely does it occur to any physician to attribute a case of small-pox to spontaneous generation. It is sometimes very difficult to trace a case to its source, but immediate failure to detect the source of contagion does not lead men to conclude that a case of small-pox has arisen independently of contagion. Now, in the case of jail fever, there are no facts that exclude an origin by contagion so far as I am aware, and there are many, on the other hand, which clearly indicate the im-

portation of the disease. I annex a short account of the epidemic at Jhelum in 1863, which was evidently due to importation. The facts came casually to light in investigating the circumstances bearing on Dr. Mouat's suggestion. I failed to discover conclusive evidence of importation in the case of the epidemics at Syalkot, Gujranwalla and the Lahore Central Jail, but in all those jails transfers from infected jails had been received shortly before the outbreak of the epidemics, and in the Central Jail one of such transfers had died under very suspicious circumstances; but I could not satisfy myself that the transfers were themselves infected, and so the proof of importation remains incomplete. In surveying the Sanitary history of the Punjab Jails for a period of ten years, the broad fact comes out that the jails situated off the great lines of communication have, with few exceptions, remained free of contagious fever; while those on the Grand Trunk Road, which were in the habit of receiving transfers from one another, and particularly in times of sickness, have all suffered; not one has escaped. The conservancy arrangements, diet, accommodation, employment, &c., were the same in all. Sirsa is an apparent exception to the rule, but we know that relapsing fever prevailed epidemically among the free population at the time it attacked the jail. This fact cannot be reconciled with Dr. Mouat's theory of the origin of the fever, because, if putrefaction of night soil were the cause of it, none of the jails should have escaped, and assuredly not a well-defined section of them, whose common characteristic is that they rarely received transfers from other jails, and especially from the Peshawur Jail in which contagious fever appears to have been endemic for many years."

442. The history of the appearance of this contagious fever among the prisoners in the few jails which were attacked with the disease in 1867, as has been already stated, goes far to corroborate the opinions which have, from time to time, been expressed with regard to it by the Sanitary Commission. That such a disease may possibly be generated afresh has never been denied, but in every case in which it has appeared in a jail there has been no evidence whatever to support the assumption that it had been created within the walls. On the contrary the proof has been all the other way. In not a few cases the introduction of the poison from without has been clearly traced, in others the circumstances were such as to render importation the only solution of the difficulty which could be reconciled with the facts. Whatever opinions may still be entertained on this point by medical officers there is no questioning the fact that good food, proper clothing and plenty of space will not preserve the prisoners from this disease, and that in addition to these very necessary and most important sanitary requisites, it is also indispensable that a watchful eye be kept on all new arrivals, and that every suspicious case be separated without delay. On this subject there is, indeed, nothing to add to the practical recommendations which were framed by the Sanitary Commission in 1865.

443. The statistics regarding sickness and mortality among prisoners, which are given in Dr. Bryden's Tables, are divided into different groups, which appear to him to embrace similar climatic conditions. Particulars shewing the details according to the local Governments and Administrations

Practical conclusions regarding this fever.

Provincial statistics of jails.

in which the jails are placed have not been entered. Statistics embracing the prison population under each Inspector General are not without value. In the following Statement which has been prepared by Dr. Bryden, the results for the past nine years have been summarized :—

Statement shewing the sickness and mortality in the Jails of the various Local Governments and Administrations of the Bengal Presidency, from 1859 to 1867.

Province.	Year.	Strength.	Number of Admissions.	Number daily sick.	NUMBER OF DEATHS.			RATES PER 1,000 OF STRENGTH.					
					Cholera.	Jail Fever.*	All causes.	Admission rate.	Daily sick rate.	DEATH RATES.			
										Cholera.	Jail Fever.	All causes.	All causes, excluding Cholera and Jail Fever.
LOWER PROVINCES	1859	17,000	27,115	997	337	None	1,903	1534	58.4	19.07	None	107.70	58.63
	1860	16,536	27,223	1,069	694	12	2,378	1646	69.6	41.96	72	143.81	101.13
	1861	16,235	24,280	960	235	None	1,484	1494	59.1	14.47	None	91.41	76.94
	1862	17,019	26,856	970	150	None	1,308	1579	57.0	8.81	None	76.96	65.05
	1863	17,903	29,690	1,034	372	None	1,694	1681	58.7	21.13	None	96.45	75.36
	1864	16,901	26,479	553	267	None	1,119	1566	50.4	15.79	None	66.21	50.42
	1865	17,554	26,569	776	202	None	1,078	1514	44.2	11.51	None	61.41	49.90
	1866	20,353	30,346	893	635	None	2,204	1491	43.9	31.20	None	108.29	77.09
	1867	18,504	25,230	756	150	None	1,128	1363	40.9	9.73	None	60.96	51.23
TOTAL	1859-67	158,374	243,694	8,310	3,072	12	11,300	1538	52.5	19.39	.07	90.30	70.84
NORTH-WESTERN PROVINCES	1859	12,354	16,394	560	56	206	1,279	1327	47.7	4.53	16.87	103.53	52.33
	1860	13,797	22,324	774	219	1,049	1,952	1618	66.1	15.87	75.81	111.46	49.80
	1861	16,043	19,750	578	439	959	2,143	1231	36.0	27.36	59.73	133.59	46.75
	1862	16,033	20,082	682	31	571	1,156	1252	42.5	1.93	35.61	72.10	34.56
	1863	15,049	18,402	606	155	356	1,156	1175	12.6	9.90	22.75	73.87	41.22
	1864	15,910	15,401	517	81	415	1,015	971	32.5	5.09	26.97	63.76	32.90
	1865	16,084	12,757	383	29	52	511	793	23.8	1.80	3.23	31.76	26.73
	1866	16,056	11,515	340	2	37	385	717	21.2	.12	2.30	23.94	21.56
	1867	15,678	11,355	359	34	None	393	726	22.9	2.17	None	25.07	22.90
TOTAL	1859-67	137,614	148,070	4,888	1,046	3,657	9,995	1076	35.5	7.61	26.58	72.63	38.44
ODISHA	1859	1,029	1,411	69	7	None	113	1759	96.2	0.80	None	109.52	103.02
	1860	1,505	3,596	191	10	261	295	2249	119.0	6.23	125.23	183.99	62.34
	1861	2,824	3,571	179	23	15	192	1294	63.4	6.14	5.31	68.00	54.55
	1862	4,330	5,342	166	4	None	225	1233	38.3	.92	None	51.96	51.04
	1863	4,011	6,020	179	174	None	658	1225	36.4	35.43	None	133.68	98.65
	1864	5,594	4,412	161	88	None	476	1000	28.7	6.79	None	85.03	78.24
	1865	5,823	5,827	205	14	None	650	1000	35.2	2.40	None	111.63	100.23
	1866	5,967	6,482	192	0	325	445	1086	32.2	None	54.46	74.56	20.12
	1867	6,580	5,366	159	16	29	175	815	24.1	2.43	4.41	26.59	19.75
TOTAL	1859-67	38,067	42,827	1,531	286	570	3,229	1107	39.6	7.40	14.74	63.51	61.37
CENTRAL PROVINCES	1859	4,326	5,588	297	None	None	315	1291	68.6	None	None	72.81	72.81
	1860	4,177	5,281	233	50	None	280	1264	55.8	19.15	None	67.03	47.83
	1861	4,490	4,292	197	8	None	139	955	43.9	1.78	None	36.96	29.18
	1862	4,670	5,475	207	14	None	172	1258	44.3	3.00	None	36.83	33.83
	1863	4,249	6,154	234	50	40	327	1448	55.1	11.77	10.83	76.96	51.36
	1864	4,559	5,825	218	63	33	259	1277	47.8	13.82	7.21	56.15	35.09
	1865	4,390	7,234	262	144	80	558	1617	57.4	32.57	20.50	120.27	67.20
	1866	4,252	7,288	241	57	None	321	1714	56.7	13.41	None	73.50	62.09
	1867	3,694	6,177	206	.....	None	151	1672	55.4	None	None	49.88	49.88
TOTAL	1859-67	38,807	53,714	2,085	415	169	2,189	1384	53.8	10.69	1.36	64.14	49.00
PUNJAB	1859	11,355	11,541	479	1	None	258	1016	42.2	.09	None	22.72	22.63
	1860	16,233	10,719	399	1	None	229	1647	39.0	.10	None	22.38	22.23
	1861	11,323	14,979	544	69	695	957	1322	48.0	6.09	44.60	84.72	33.83
	1862	10,510	12,962	438	93	267	695	1198	40.5	8.89	24.68	61.47	28.20
	1863	9,980	11,561	442	.....	320	659	1157	44.2	None	32.04	65.07	33.93
	1864	9,639	11,975	424	1	418	826	1243	44.0	.10	64.17	83.77	21.50
	1865	10,482	10,250	311	2	192	396	977	29.7	.10	18.32	34.92	1.41
	1866	10,097	9,545	275	.....	63	196	892	23.7	None	4.90	18.32	13.36
	1867	10,500	10,721	295	41	32	259	1020	28.1	3.99	3.95	24.66	17.71
TOTAL	1859-67	95,034	104,253	3,607	208	1,957	4,413	1697	37.9	2.19	20.91	46.46	23.36
BENGAL PRESIDENCY	1859	46,733	62,449	2,401	401	206	3,808	1336	62.7	8.58	4.41	82.77	69.73
	1860	46,349	69,143	2,660	1,004	1,269	6,184	1491	57.5	21.66	27.16	110.77	61.95
	1861	60,616	60,852	2,458	774	1,479	4,920	1313	48.3	15.21	29.05	96.63	52.37
	1862	62,871	71,117	2,463	292	838	3,526	1345	46.6	5.52	15.85	66.69	45.32
	1863	63,401	71,727	2,555	751	722	4,198	1368	48.4	14.31	13.78	88.84	57.73
	1864	63,807	64,552	2,173	450	1,006	3,692	1227	41.3	8.56	20.26	70.19	41.37
	1865	64,337	62,657	1,927	390	334	3,183	1153	35.4	7.19	0.11	57.06	41.33
	1866	67,322	65,176	1,941	694	415	3,551	1137	33.9	12.10	7.24	61.94	42.60
	1867	54,962	58,985	1,777	271	61	2,100	1071	32.9	4.93	1.11	38.32	26.28
GRAND TOTAL	1859-67	468,460	592,558	20,471	5,027	6,380	34,428	64	43.6	10.73	13.62	73.49	49.13

* Excluding the Jubbulpore Thuggee Jail which was included in the Returns of previous years.

† An approximate Estimate.

PART V.

GENERAL POPULATION.

444. In accordance with the plan adopted in 1866, a series of one hundred and sixteen questions, regarding the sanitary condition of the people, similar to those appended to last annual report, was circulated to all Civil Surgeons throughout this Presidency. In reply to these, one hundred and thirty-three Reports have been received, many of them prepared with great care, and I shall now proceed shortly to summarize the information on several important heads regarding the general population of the country which has been obtained from them, and also from other sources. On many questions, however, which were discussed in last Annual Report I shall not enter at present, as information with regard to them is being collected by the new Sanitary Commissioners in their respective Provinces.

445. A general census of the inhabitants of the Punjab was taken on the night of the 10th January 1868. A statement of the results, with a full report regarding them, is now in preparation.

446. In connection with the interesting particulars with reference to the population of the North-Western Provinces which were given in last Annual Report, it was suggested that a general census of the whole of the inhabitants should be taken and should be repeated, as in Great Britain, every ten years. In order to render the Registration statistics of each Province of any value, it is indispensable that the number of its inhabitants should be known. Nor are the advantages of such a measure confined to merely sanitary considerations. The question has been under the consideration of the Government, and a general numbering of the people will it is believed take place in 1871.

447. The Reports regarding the crops in Bengal during the past year are generally favorable, and even where the yield has been below the average, or the price of grain owing to other causes has been higher than usual, the people do not appear to have suffered, for generally the rate of wages has risen in proportion to the increase in the price of food. In the south-eastern districts considerable damage was done to the crops by the Cyclone of November 1867, and the inundation which attended it. In the tracts which had been stricken with famine in 1866, prices continued high in the beginning of 1867, but gradually fell. Regarding Orissa the following particulars are given by Dr. Stewart, the Civil Surgeon of Cuttack :—

“Orissa being essentially a rice-producing country, rice is the great article of food amongst its inhabitants. The grain is large and nutritious, but coarse, and is considered far inferior to the average produce of Bengal and Behar.

* * * * *

"The two great rice crops of Cuttack are called the *Sarud* and *Beali*. Of these, the first and principal one is sown in May and June and reaped from the middle of November to the middle of January; the land which grows it rarely yields any second crop. The second in importance called the *Beali* is sown about the same time on the higher lands, and the produce is obtained from the end of August till the end of September. Afterwards a plentiful crop of the rubbee grains is derived from the same fields. There is another less abundant crop put into the ground in August and September called the *Salkia* (of sixty days) and reaped in November, and an inferior description of rice, which is sown in low marshy spots at the opening of the cold weather, and by frequent transplantation and irrigation is rendered fit for cutting in the following April; this cultivation is called *Dallao*. The *Luggoo* crop is sometimes sown after the *Beali* is taken in. In 1867, the crops on the whole were a success, there was no want of water for them during the season, all that was sown came to maturity. At the early sowing season, want of seed-grain and of labour no doubt existed, as the effects of famine did not begin to cease till the latter half of the year. It was only after the *Beali* crop was reaped that the country began to recover the shock of the famine.

"The prices of food during the past year were generally high; it was not till the ~~river~~ ^{river} had risen and large quantities of rice arrived from Sumbulpore that prices commenced ~~fall~~ ^{fall}; this fall steadily increased as the results of the harvest became known.

"The destitution which prevailed throughout the district during the year, particularly in the early months, was seen in the many relief centres established; in the increase of crime and consequent overcrowding of Jails, in the increase and prevalence of sickness connected with hardship, privation, and distress. Towards the close of the year as prices fell, and the condition of the people improved, a gradual reduction of the above evils became manifest. Relief operations diminished, and on the 18th of January were finally closed."

448. In the other parts of the country the harvests have generally been good. In the Central Provinces food was abundant and cheap. In Oude the crops were, as a rule, above the average, and much lower rates ruled over the province than in 1866 when large exportations of grain took place to the famine tracts. Throughout the North-Western Provinces and the Punjab the crops were generally good and equal to the average, though in some few districts the yield was not so good as usual, owing to the want of rain when it was required, and its unseasonable fall afterwards. The Reports shew that throughout the country the price of food has been steadily rising for some years, but wages have risen also, and no ill effect has been observed on the health of the people.

449. The report of Dr. Murray Thomson for the year shews that during 1867 meteorological observations were made at twenty-three stations in the North-Western Provinces and Oude. At Lucknow a well-found observatory has been established under the immediate care of Dr. Bonavia. In the North-Western Provinces, the six principal observing stations are Roorkee, Nynsee Tal, Agra,

Ajmere, Benares, and Jhansie. In addition to these a set of instruments has now been supplied to the following places,—Goruckpore, Allahabad, Futtehgur, Bareilly, Meerut, and the new hill Station Chuckrata. Observations have also been recorded at twenty-two Civil and Military Hospitals. With regard to the rains of 1867, Dr. Murray Thomson observes :

“The rains of 1867 came on with a great uniformity. Within a period of four or five days they had appeared all over the North-West Provinces, but their disappearance was not so uniform. In the higher more northern and western districts, there was no rain after the first week of September, but in the more eastern and southern tract they continued, though with many considerable breaks, well into October. In many more places, although there was no actual rain-fall, yet those characteristics of the season, a cloudy sky, and a high relative humidity of the air yet remained, and these did not disappear till beyond the middle of October.”

A summary of the observations made at four of the chief stations in 1867, with a comparison of the results of the four previous years in each is given in the annexed Tables which have been extracted from Dr. Thomson's Report.

Table shewing some mean results of Observations at Roorkee for the last five years.

Lat. 29° 52', N. Lon. 77° 57' 15" E. Height above Sea, 880 feet.

(218)

YEAR.	BAROMETER.				HYGROMETER—HUMIDITY OF ATMOSPHERE—SATURATION=100.				THERMOMETER IN SHADE.						RAIN. WIND—NUMBER OF DAYS IT BLEW IN CERTAIN DIRECTIONS.															
	Highest monthly mean.		Lowest monthly mean.		Highest monthly mean.		Lowest monthly mean.		Maximum monthly mean (day).		Minimum monthly mean (night).		Highest maximum.		Lowest maximum.		Highest minimum.		Lowest minimum.		Total fall.	N.	N. E.	E.	S. E.	S.	S. W.	W.	N. W.	Calim.
	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.										
1863.	28.575	28.793	Jan. 29.197	Jan. 29.113	March 28.510	Oct. 28.250	May. 65	July. 91	May. 42	37	80	63	May. 104	Jan. 70	June. 81	Jan. 43	51	46.5	5	4	7	60	26	7	2	40	205			
1864.	28.944	28.861	Nov. 29.211	Nov. 29.121	July. 28.641	July. 28.550	59	Aug. 80	April. 35	25	89	60	June. 109	Jan. 70	July. 79	Jan. 40	45	31.90	4	21	4	83	8	10	..	64	172			
1865.	28.975	28.867	Jan. 29.203	Jan. 29.125	July. 28.656	July. 28.571	61	Aug. 78	April. 45	36	89	63	June. 107	Dec. 71	June. 79	Jan. 44	53	51.49	4	7	13	94	3	2	..	40	209			
1866.	28.944	28.851	Dec. 29.215	Dec. 29.128	June. 28.633	June. 28.543	56	Aug. 80	May. 24	19	89	62	May. 108	Jan. 67	June. 80	Dec. 40	44	31.36	3	0	21	106	1	1	1	67	169			
1867.	28.955	28.942	Dec. 29.242	Dec. 29.157	July. 28.677	July. 28.605	54	July. 79	May. 29	19	87	62	May. 102	Dec. 71	July. 77	Dec. 44	70	47.53	5	32	12	90	20	19	22	34	133			
Genl. mean of 5 yrs.	28.938	28.861	29.273	29.129	28.623	28.504	58	79	35	27	89	62	106	70	79	43	53	45.75	4	14	11	87	12	6	5	49	175			

This Table includes a comparison for the last five years, and is the most complete in all its elements. The barometer columns show that the means for 1863 were lower than those of the succeeding years. I should remark, however, that these were comparatively little attention given to the reading of the instruments until I took over charge of the Observatory in 1864; and, therefore, the barometer means for 1863 may be erroneous. Moreover, in 1863, the lowest mean readings occurred in March and October, while in the succeeding years these occurred either in June or July. The latter are more likely to be the months in which a low air pressure occurs than the former. The other four years also correspond very closely with each other, and during these the observations were taken with increased care. The highest mean air pressures occur in either January, November or December, but more in January and December than in November. The humidity columns show results, which, on the whole, are such as might have been expected; there is, however, one point where it is not so. The lowest mean humidity occurred in 1867, and yet that year had the largest rain-fall and the greatest number of days on which it fell of any of the years. In 1867 also the lowest mean maximum or day temperature occurred, this latter circumstance is reconcilable with the high rain-fall, but is irreconcilable with the low relative humidity. The prevalence of S. E. winds at Roorkee is a point to be noticed.

Table shewing some mean results of Observations at Nynee Tal, for the last five years.

Lat. 29° 20', N. Lon. 79° 31' E. Height above Sea, 6,463 feet.

YEARS.	BAROMETER.				HYGROMETER—HUMIDITY OF ATMOSPHERE—SATURATION. 164.				THERMOMETER IN SHADE.						RAIX.	WIND—NUMBER OF DAYS IT BLEW IN CERTAIN DIRECTIONS.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
	10 A. M.		Highest monthly mean.		Lowest monthly mean.		Highest monthly mean.		Lowest monthly mean.		Maximum monthly mean (day).		Minimum monthly mean (night).			Highest max. num.		Highest min. num.		Lowest min. num.		Number of days on which it fell.	Total fall.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
																																			10 A. M.		4 P. M.		10 A. M.		4 P. M.		10 A. M.		4 P. M.		Day.		Night.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.		10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.														10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.

The barometer means at this place show a very striking decrease from 1863 on to 1867; the decrease of nearly three-tenths between 1863 and 1867 is certainly very remarkable. In 1863 also there was an exceptionally low humidity and rain-fall, circumstances which rather tend to throw a doubt on the high barometer in that year. It will be seen that the humidity of the air is higher at 4 P. M. than at 10 A. M.; this is most unusual. It may be due to evaporation from the lake, and to the confined nature of the valley in which Nynee Tal is; both of which circumstances would tell very much on the instruments at the Observatory, which is situated very low and well in to the shut end of the valley. There can be no doubt that it is this latter circumstance which explains the great prevalence of South East winds here.

Table showing some mean results of Observations at Agra for four preceding years.

Lat. 27° 10' N. Lon. 78° 5' E. Height above Sea, 551 feet.

YEARS.	BAROMETER.				HYGROMETER—HUMIDITY OF ATMOSPHERE— SATURATION=100.				THERMOMETER IN SHADE.						RAIN.		WIND.									
	10 A. M.	4 P. M.	Highest monthly mean.		Lowest monthly mean.		Highest monthly mean.		Lowest monthly mean.		Maximum monthly mean (day).	Minimum monthly mean (night).	Highest maxi- mum.	Lowest maxi- mum.	Night.	Number of days on which it fell.	Total fall.	N.	N. E.	E.	S. E.	S.	S. W.	W.	N. W.	Calm.
			10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.																
1863	29.256	29.130	Jan. 29.523	Jan. 29.444	July 28.955	June 28.853	July 82	July 80	May 22	May 10	92	63	May 113	Jan. 75	June 82	44	29.33	38	9	30	15	16	5	88	53	115
1864	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
1865	29.295	29.204	Dec. 29.584	Dec. 29.563	June 29.034	June 28.859	Aug. 88	Aug. 79	April 38	April 28	92	67	June 111	Dec. 74	June 86	47	26.60	14	16	47	11	15	11	122	12	117
1866	29.274	29.171	Dec. 29.584	Dec. 29.445	July 29.997	June 28.885	Oct. 90	Aug. 79	Dec. 67	April 42	91	64	May 111	Jan. 70	June 85	43	23.93	3	6	33	6	2	7	158	7	148
1867	29.297	29.195	Dec. 29.580	Dec. 29.473	July 29.012	Aug. 29.874	July 72	July 70	May and Nov. 45	Nov. 32	...	...	...	...	...	...	72	30.36	38	49	42	38	41	41	59	71
General means of 4 years...	29.280	29.180	29.571	29.481	29.974	29.868	83	77	43	29	...	...	...	...	...	...	50	27.30	22	20	38	17	18	16	107	36

The point which chiefly calls for attention in this Table is the relation to the relative humidity of the rain-fall of 1866 and 1867; these, in both cases, being the very opposite to what might have been expected. In 1866 there was high humidity with a regular rain-fall, these being respectively the highest and lowest recorded in the table. In 1867 the reverse of this was the case, the second lowest humidity occurs with the highest rain-fall, and the number of days in which rain fell being strikingly in excess of any other year. The humidity columns of 1866 also show that the highest mean humidity at 10 A. M. took place in October, which was an almost rainless month, '08 of an inch falling on the 12th, and no other rain-fall whatever was recorded. The prevalence of North-East, East and South-East winds in 1867, as compared with previous years, is remarkable.

Table shewing some mean results of Observations in Benares for four preceding years.

Lat. 25° 2' N. Lon. 83° 5' E. Height above Sea, 260 feet.

YEAR.	BAROMETER.				HYGROMETER, HUMIDITY OF ATMOSPHERE— SATURATION=100.				THERMOMETER IN SHADE.				RAIN.		WIND.										
	Highest monthly mean.		Lowest monthly mean.		Highest monthly mean.		Lowest monthly mean.		Maximum monthly mean (day).	Minimum monthly mean (night).	Day.		Night.		Number of days on which it fell.	Total fall.	N.	N. E.	E.	S. E.	S.	S. W.	W.	N. W.	Calm.
											Lowest maximum.	Highest maximum.	Lowest minimum.	Highest minimum.											
		10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.	10 A. M.	4 P. M.																
1863	29.534	29.517	Jan. 29.942	Jan. 29.857	June 29.341	July 29.261	54	45	July 77	July 70	Mar. 33	Mar. & Apr. 24	..	..	49	44.4	2	42	47	47	3	76	50	44	18
1864	29.664	29.561	Jan. 29.964	Dec. 29.824	July 29.336	July 29.253	47	39	Sept. 69	Augt. 68	Mar. 31	Mar. & Apr. 25	..	..	35	14.77	4	14	41	39	10	60	117	35	..
1865	29.665	29.573	Jan. 29.933	Jan. 29.851	June 29.359	July 29.219	55	45	July 71	July 76	Apr. 38	Apr. 28	..	..	56	41.66	2	21	62	35	10	31	113	47	21
1866	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
1867	29.627	29.535	Jan. 29.940	Jan. 29.852	July 29.288	July 29.220	58	51	July 74	Augt. Sept 68	Mar. 40	Mar. 29	..	..	57	44.99	22	10	86	10	14	44	119	19	27
Genl. mean of 4 years...	29.637	29.546	29.944	29.846	29.331	29.245	53	45	72	70	35	26	..	..	49	36.36	7	22	59	33	9	53	99	36	16

The point calling for especial notice in this Table is the exceptionally low rain-fall of 1864, but this it will also be observed is attended with a low degree of humidity; and it may be further remarked, that there is no exception here to this normal relation of the humidity and the rain-fall, they both go nearly *pari passu*.

450. From Dr. Neil's Report on the meteorology of the Punjab during the year 1867, the following Tables have been taken. The Meteorological observations in the Punjab. first contains an abstract of the observations taken at six stations, the other a summary of the Rain-fall in each of the districts of the Province. Among other interesting information a statement is given, shewing the observations taken by Dr. Cayley at Le in Ladakh between July and the first week in November.

STATIONS.	BAROMETRIC PRESSURE.			HYGROMETRY.		Dew point.	Relative humidity.	TEMPERATURE IN SUN'S RAYS.			TEMPERATURE IN THE SHADE.						Mean daily range.	Mean monthly temperature.	Rain-fall.
	Maximum.	Mean.	Minimum.	Dry Bulb.	Wet Bulb.			Maximum.	Lowest Maximum.	Mean Maximum.	Maximum.	Lowest Maximum.	Mean Maximum.	Minimum.	Highest Minimum.	Mean Minimum.			
Lahore	29.26	29.09	28.90	83.6	68.1	58.7	43	133.6	101.0	123.2	99.8	80.2	91.2	51.9	70.0	60.1	30.9	75.5	20.21
Mooltan	29.450	29.311	29.042	84.2	65.2	52.4	34	152.0	129.0	114.6	102.4	82.0	92.0	51.1	72.1	61.1	30.9	86.2	5.43
Dera Ismail Khan	29.50	29.37	29.25	84.62	68.37	57.7	40	144.0	117.5	135.67	99.6	80.2	91.13	49.6	69.6	58.87	32.15	74.96	8.34
Rawul Pindee	28.49	28.32	28.16	79.45	64.89	54.7	69	146.29	110.37	133.71	100.08	77.1	91.11	49.08	68.22	56.83	34.38	73.96	17.68
Sealkote	29.50	29.23	28.97	80.4	67.0	57.9	45	129.0	94.6	118.11	97.8	73.0	88.7	53.3	71.4	60.5	28.4	74.0	47.81
Shahpore	29.34	29.22	29.04	84.86	65.28	52.3	33	157.2	125.4	145.3	104.9	82.0	95.20	47.3	68.4	56.25	36.65	74.85	15.6

Table shewing the Monthly and total Annual Rain-fall in thirty-two Stations in the Punjab for the year 1867.

	Jan.	Feb.	March.	April.	May.	June.	July.	Augt.	Sept.	Octr.	Nov.	Dec.	TOTAL.
	Inch	Inch	Inch	Inch	Inch	Inch	Inch	Inch	Inch	Inch	Inch	Inch	Inch. •
Delhi	"	"	0·8	0·7	0·7	0·9	9·7	7·4	1·1	"	"	1·7	23·0
Gurgaon	0·1	"	0·3	0·3	1·9	0·3	4·6	15·1	·5	"	"	·4	23·5
Kurnaul	0·2	0·2	0·5	0·6	0·9	2·4	7·9	13·1	1·8	"	"	·6	28·2
Hissar	"	0·3	0·9	"	0·5	0·9	10·3	7·4	0·4	"	"	1·2	21·9
Rhotuck	0·1	"	1·3	1·2	1·6	0·6	5·7	9·8	2·5	"	"	1·1	23·9
Sirsa	"	"	0·7	0·4	0·1	0·8	3·0	8·1	1·7	"	"	·8	15·6
Amballa	0·3	"	0·4	"	0·9	0·6	15·3	18·2	1·9	0·7	"	"	44·3
Loodianah	0·8	0·3	0·7	1·4	2·8	1·4	4·1	7·3	0·8	"	"	"	19·6
Simla	"	0·3	1·7	3·7	6·2	6·6	10·8	16·7	3·6	0·9	"	·6	51·1
Jallundur,	0·1	0·3	0·6	0·7	6·5	2·5	4·6	13·0	3·9	"	"	·1	32·3
Hoshiarpore	0·9	0·7	1·0	0·8	3·8	2·3	9·6	9·2	2·4	"	"	·1	30·8
Kangra	2·3	1·7	2·9	1·9	7·9	3·3	21·2	26·8	"	0·2	"	·3	71·5
Amritsar	"	0·4	0·3	1·0	1·3	0·9	6·0	11·3	4·0	"	"	"	25·2
Syulkot	0·7	0·3	1·6	4·5	1·7	1·0	9·7	26·2	1·3	"	"	"	46·0
Gurdaspore	0·6	0·3	1·3	"	4·8	0·1	5·4	8·9	0·8	"	"	·4	22·6
Lahore	"	0·8	0·5	0·8	3·4	1·5	5·5	4·8	1·6	"	"	1·2	20·1
Ferozepore	0·9	"	0·5	1·0	2·5	"	2·6	2·9	0·5	"	"	1·5	12·4
Gujranwala	0·8	0·3	2·6	2·5	2·0	1·4	7·9	10·5	2·9	"	"	·8	31·7
Rawulpindi	1·4	2·3	0·2	4·5	1·2	0·1	2·2	7·6	1·7	"	"	·1	21·3
Jhelum	0·4	0·6	1·3	1·7	1·3	0·5	2·9	5·5	2·2	"	"	·2	16·6
Gujerat	0·5	0·5	2·1	1·7	1·4	"	8·4	13·8	1·9	"	"	·3	30·6
Shahpore	0·4	0·6	1·5	1·1	1·4	0·5	1·5	4·5	1·3	"	"	·1	12·9
Mooltan	"	"	0·3	1·0	0·8	"	2·1	0·5	0·6	"	"	1·1	6·4
Jhung	0·1	0·4	1·9	1·4	0·4	0·9	4·1	3·2	1·1	0·1	"	·1	13·7
Montgomery	"	"	0·1	0·7	"	"	0·4	2·3	"	"	"	·3	3·8
Mozuffergurh	0·1	"	0·1	0·4	0·5	"	"	1·1	1·8	"	"	1·0	5·0
Dera Ismail Khan	0·5	0·4	0·4	0·8	"	0·3	1·1	0·7	0·2	"	"	·4	4·8
Dera Gazi Khan	0·1	0·3	0·2	2·2	"	0·1	0·4	1·0	1·8	"	"	1·0	7·1
Bunnoo	0·2	1·2	1·3	2·5	1·6	"	1·1	7·3	"	"	"	"	15·2
Peshawur	"	0·5	0·4	2·7	0·8	"	"	3·1	"	"	"	·4	7·9
Kohat	"	1·4	0·8	3·0	0·9	"	"	1·9	0·1	"	"	·7	8·8
Huzara	2·7	6·7	1·0	4·0	6·1	0·2	7·2	11·8	3·3	1·3	0·2	1·5	47·0

451. In illustration of the meteorology of Bengal during the past year Meteorology of Bengal. the following statements of temperature and rain-fall at Monghyr, Dacca, Jessore, and Pooree are given.

MONGHYR—REPORTED BY DR. CAMERON.

Average temperature from 1849 to 1866.

			IN SHADE.			IN SUN'S RAYS.		
			Maximum.	Minimum.	Medium.	Maximum.	Minimum.	Medium.
January	...	...	71·88	55·63	64·23	89·26	77·73	83·24
February	...	...	78·81	59·94	68·50	97·77	81·13	88·57
March	...	...	89·83	66·30	77·88	107·35	89·27	98·88
April	...	...	96·16	74·88	85·06	111·56	97·38	104·51
May	...	...	98·32	77·77	87·87	115·31	100·41	107·80
June	...	...	96·21	80·61	88·34	114·05	100·73	107·05
July	...	...	91·39	80·44	85·17	108·53	98·78	104·01
August	...	...	88·50	79·99	84·47	107·79	98·30	102·44
September	...	...	89·43	79·16	83·04	109·15	104·32	102·95
October	...	...	87·00	73·38	80·18	107·52	101·15	101·31
November	...	...	81·21	64·22	72·43	104·72	86·70	95·41
December	...	...	72·15	54·92	66·04	90·94	81·41	85·98

Temperature during 1867.

			IN SHADE.		
			Maximum.	Minimum.	Medium.
January	...	...	75	54	64·5
February	...	...	84	55	69·5
March	...	...	95	65	80·0
April	...	...	98	74	86·5
May	...	...	99	74	86·5
June	...	...	99	79	89·0
July	...	...	89	80	84·5
August	...	...	84	79	81·5
September	...	...	88	81	84·5
October	...	...	85	69	77·0
November	...	...	83	64	73·5
December	...	...	70	54	62·0

Rain fall.

	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
Average rain-fall, 1851 to 1866 ...	0·57	0·96	0·93	0·59	2·17	6·91	10·91	9·68	8·75	4·07	0·39	0·08

Total rain fall for 1867, 43·49 distributed as follows:—

1867 ...	1·10	0·85	1·65	0·70	2·70	13·07	6·62	8·15	5·25	3·40	0·00	0·00
----------	------	------	------	------	------	-------	------	------	------	------	------	------

DACCA—REPORTED BY DR. WISE.

Average monthly temperature of previous years.

	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
Hermann Schlagintweit's table.	63·6	69·6	80·1	82·9	85·1	88·5	82·7	83·8	83·8	81·6	74·1	67·7
1860 ... ..	.....	79·75	82·25	86·00	85·25	84·75	84·25	83·50	83·50	82·00	74·00	.....
1861	66·75	70·25	79·00	83·75	82·75	83·25	83·75	83·75	84·50	82·00	75·75	67·00
1862	65·75	73·50	78·25	82·00	81·75	82·75	82·75	83·00	84·25	81·50	75·75	68·75
1863	66·00	71·75	82·25	80·75	81·00	83·75	84·25	83·50	84·00	82·25	76·75	68·25
1864	66·00	72·00	78·00	84·75	82·50	83·25	83·25	83·00	84·00	80·50	75·75	69·25
1865	69·00	72·13	79·28	83·90	81·50	81·00	83·00	84·50	84·00	83·10	76·80	70·20
1866	68·20	70·73	83·07	81·83	84·70	84·55	83·20	83·34	85·00	81·63	76·91	67·56
Average ...	66·95	72·67	80·30	83·28	83·20	83·75	83·57	83·22	84·26	81·56	75·95	68·50
Average monthly temperature of 1867 ..	66·18	69·53	77·96	81·17	82·29	83·39	82·09	82·42	85·09	83·54	75·98	71·5

	Average rain-fall for each month from 1850 to 1865.	Rain-fall of 1867.
January	0·20	·83
February	0·46	·27
March	1·35	1·66
April	7·75	4·66
May	10·01	4·94
June	14·11	7·88
July	14·38	18·78
August	13·68	17·38
September	8·48	10·74
October	7·07	1·61
November	0·74	9·12
December	0·12	
Total ...	<u>78·35</u>	<u>77·87</u>

JESSORE—REPORTED BY DR. K. McLEOD.

	Mean average temperature of 11 preceding years 1856-66.	Mean temperature of 1867.	Average rain-fall of 8 preceding years 1856-63-66.	Rain-fall of 1867.	REMARKS.
January	66·02	64·3	·19	·250	
February	71·44	67·8	·06	1·100	
March	80·36	77·7	1·6	2·430	
April	83·45	80·2	4·3	9·821	
May	83·83	82·7	11·8	4·449	
June	83·96	82·2	13·0	8·308	
July	83·63	81·8	13·6	12·502	
August	83·23	83·2	12·1	14·193	
September	83·53	84·0	8·9	13·349	
October	80·87	80·5	7·5	10·089	
November	74·31	72·1	·61	4·651	
December	66·85	64·6	·35	·11	
Total ... ..	...	...	74·01	81·142	
Average	78·45	76·7	...	...

POOREE—REPORTED BY MR. UDDY CHUND DUTT.

	Average temperature for the past 11 years.	Temperature for the year 1867.	Average Rain- fall for past 11 years.	Rain-fall of 1867.
January ...	74.81	73.78	1.10	0.0
February ...	76.80	78.54	2.12	0.0
March ...	81.93	82.11	0.57	0.0
April ...	84.20	84.35	3.21	4.20
May ...	86.44	86.48	2.46	4.60
June ...	85.66	85.80	7.94	8.20
July ...	84.89	85.30	8.27	13.40
August ...	83.74	84.76	21.56	14.70
September ...	84.27	85.93	13.44	10.60
October ...	82.70	83.69	10.42	14.30
November ...	77.77	78.19	2.90	4.50
December ...	71.76	73.93	0.31	0.0
TOTAL ...	.....	.....	72.39	74.50

452. The cyclone of November 1867 is the most remarkable meteorological phenomenon of the year. Its violence was chiefly confined to the south-eastern districts of Bengal. Regarding its occurrence in Jessore the following interesting account has been furnished by Dr. K. McLeod:—

“The earliest indication of any change in the weather preceding the cyclone was on the 30th of October. On the evening of that day many dense clouds gathered from the East and South-East, and about 10 p. m. light rain began to fall. On the 31st, I had occasion to ride out to the out-station of Jenidah, and rode back on the 1st of November. I can thus describe the state of weather preceding the hurricane from personal experience of a very unpleasant character. The morning of the 31st was cloudy, and raw and dashing rain began to fall about 8 a. m. The wind was from North-East and East, and blew in heavy gusts. During the whole day the weather continued dense, gusty, raw and blustering; 3.186 inches of rain fell. The humidity ranged from 917 to 970 (Saturation 1000) the thermometer from 66.0° to 75.5°, and the barometer from 29.754 to 29.894 inches. The diurnal tide was evident, but the barometer was falling.

“The 1st of November was almost a repetition of the previous day. The wind blew from the North-East in strong gusts; 3.371 inches of rain fell in heavy showers, which became continuous towards evening. The thermometer varied from 60.5° to 70.2. The barometer showed a slight rise of .030 inch at sun rise, but it continued to fall steadily during the day, showing, however, a rise of .019 at 10 p. m.—a tendency to the p. m. flow. It varied from 29.734 to 29.862 inches; the humidity was from 939 to 956. There was a slight cessation of rain about 2 p. m. Large heavy clouds came crowding down from North and North-East, drifting at an immense pace and revealing through the breaks in them an upper stratum of settled sky; soon, however, the rain again set it, and the atmosphere became dense and moist.

“About 11 p. m. the storm began in earnest; heavy gusts blew at frequent intervals. The wind now assumed a more Easterly direction. The gusts became more tremendous and loud as the night advanced, separated by intervals

comparative calm. About 4 A. M. the hurricane attained its maximum. The wind now roared, and its force seemed to be almost irresistible. Doors, windows, and the barriers placed behind them could hardly resist it; it now blew from South-East. About 5 A. M. it had veered more to South and was abating; luminous appearances were now observed to South, South-East, and South-West. These phenomena were observed very generally throughout the district, and in most cases were attributed at the time to the agency of fire. Heavy rain fell during the early part of the night, but subsided towards morning. No thunder nor lightning was observed; at dawn the storm had materially abated. The wind blew from the South-West, there was a slight drizzling rain; as the day advanced the wind calmed down; a clear settled sky appeared, and a gentle breeze came from the North-West. The foregoing is a description of the storm as it was experienced in the Sudder Station. I have had accounts from every part of the district, and from these it appears that the phenomena did not vary in any material respect. Thunder and lightning occurred to the extreme South-East, and the rivers to the South rose above their usual level. The barometer showed a depression to 29.126 on the morning of the 2nd at sunrise, and continued steadily to rise during the day. The instrument which was at the jail hospital could not be made available for frequent observations.

“The damage done to houses, trees, crops, and cattle throughout the district was considerable.

126 human lives were lost.

10,000 cattle lost.

“All the fruit trees were much injured and the date palms which yield in the shape of sugar and molasses a very considerable revenue in this district, were much injured.

“The roots and stems of most of the trees felled pointed to East and South-East, showing that the force of the wind was greatest from these quarters.”

453. In last Annual Report a Statement was given shewing the average Annual Temperature and rain fall at Nagpore for the preceding ten years. With those figures the following results of observations taken in 1867 may

Meteorology of the Central Provinces.

be compared:—

MONTH.					Mean Temperature of 1867.	Rain fall of 1867.
January	...	...	...	...	71	0
February	...	...	...	...	75	0
March	...	...	...	...	84.5	0.34
April	...	...	...	...	88.6	2.60
May	...	...	...	...	93.4	1.40
June	...	...	...	...	88.7	14.50
July	...	...	...	...	81.7	12.70
August	...	...	...	...	80.9	10.70
September	...	...	...	...	81.4	13.28
October	...	...	...	...	77.9	2.54
November	...	...	...	...	70.8	0
December	...	...	...	...	68.3	0.05
Total					.....	58.11

454. On the receipt of the mortuary statements of the North-Western Provinces for the year 1866, His Honor the Lieutenant Governor remarked that "from the examination to which the Returns have been subjected, and a comparison of them with those of other countries, it is unquestionable that the mortality in these Provinces has been greatly under-stated; this is the case in an especial manner with the mortality of women." The attention of district officers was accordingly drawn to the necessity of obtaining more correct Returns. The importance of examining and checking the returns, of testing them occasionally on the spot, and of calling for explanation of palpable errors was also pointed out. The following Table, exhibiting the general results in each district for 1867, shews that much remains still to be done before these statistics can be regarded as reliable. It is hardly possible that the total death-rate has been only 12·54 per 1,000, while the discrepancies between the results of contiguous districts are very great and explicable only on the ground that the Registration is still incomplete.

Table shewing the mortality in the Districts of the North-Western Provinces for the year 1867.

NAME OF DISTRICT.	SUPPOSED POPULATION.	DEATHS FROM						RATIO OF DEATHS PER 1,000.
		Cholera.	Small Pox.	Fever.	Bowel complaint.	All other diseases and causes.	Total.	
Dehra Doon ...	1,02,831	877	74	417	162	365	1,895	18·42
Saharanpoor ...	8,66,483	877	1,136	5,853	731	4,855	13,152	15·52
Mozuffurnuggur ...	6,82,189	2,051	965	5,140	755	4,855	13,766	20·17
Meerut ...	11,99,593	4,073	914	10,287	1,087	3,392	19,753	16·46
Boolundshuhur ...	8,00,481	721	2,356	4,654	802	1,351	9,887	12·35
Allypore ...	9,25,538	1,101	426	6,086	1,023	1,965	10,604	11·45
Bijnour ...	6,90,975	784	4,527	5,548	654	2,151	13,667	19·77
Moradabad ...	10,95,306	4,258	6,011	4,630	2,886	6,040	24,725	22·57
Budaon ...	8,89,810	796	3,370	4,560	2,209	1,253	12,188	13·38
Bareilly ...	14,64,199	7,828	4,343	8,916	1,006	8,219	30,312	20·70
Shahjehanpoor ...	9,18,850	7,831	1,073	7,202	838	4,724	21,668	23·58
Terrae ...	91,802	622	301	1,002	56	588	3,160	34·51
Muttra ...	8,00,321	773	143	6,075	931	1,399	9,921	12·30
Agra ...	10,28,544	1,457	515	9,698	1,391	3,035	16,099	15·65
Furruckabad ...	9,15,943	611	393	5,525	662	1,231	8,422	9·19
Mynpoorie ...	7,90,220	678	1,256	5,249	612	1,758	9,553	13·64
Etawah ...	6,26,444	124	201	4,410	173	766	5,674	9·05
Etah ...	6,11,351	1,235	518	320	606	4,669	7,348	11·96
Jaloun ...	4,05,272	20	22	1,276	127	653	2,098	5·17
Jhansie ...	3,57,774	.....	23	1,777	195	1,025	3,020	8·44
Lullutpoor ...	2,18,146	.....	158	1,499	415	1,979	4,051	18·32
Cawnpoor ...	11,88,862	1,816	1,285	8,528	881	2,867	15,377	12·93
Futteeipoor ...	6,80,786	711	749	5,997	473	1,473	9,303	13·75
Banda ...	7,21,372	2,510	826	8,394	727	1,765	14,252	19·67
Allahabad ...	13,93,183	515	721	6,829	84	1,185	9,331	6·69
Humeerpoor ...	5,20,941	223	70	3,206	235	1,071	4,805	9·22
Jounpoor ...	10,15,427	243	1,292	3,427	338	2,099	7,399	7·28
Goruckpoor ...	19,83,816	4,991	2,494	6,872	323	952	15,632	7·87
Bustee ...	11,55,697	5,112	1,665	2,379	.....	1,013	10,169	6·98
Azimgarh ...	13,85,872	851	482	.....	240	6,113	7,686	5·54
Mirzapoor ...	10,54,413	437	321	6,352	612	992	8,714	8·26
Benares ...	7,93,277	570	399	6,111	255	1,100	8,435	10·63
Ghazeepoor ...	13,32,403	1,259	593	7,639	415	1,136	11,042	8·28
Ajmere ...	4,26,268	376	257	2,708	342	747	4,430	10·39
TOTAL...	2,93,90,389	56,367	39,879	1,69,726	22,249	79,689	3,67,910	12·52

455. The two following Tables exhibit the results of Registration of deaths among the urban and rural population of the Central Provinces for the year 1867-68. The figures here also are doubtless to a certain extent fallacious, but a ground work has been made, and in future years the information will become more accurate and valuable. Registration of births and of marriages has also been commenced. The statements are for the official year. It is very desirable that a uniform system should be adopted in all the Provinces; that the Returns should all be for the calendar year, and that one form of statement should be used in all.

Table shewing Deaths in Urban Population of the Central Provinces.

DIVISIONS.	DISTRICTS.	NO. OF TOWNS.	POPULATION.	DEATHS.				TOTAL.		TOTAL DEATHS.	Deaths per 1,000 of population.		Proportion of Female deaths per 100 of Male deaths.		Proportion of Infants per 100 of Adult deaths.
				MALE.		FEMALE.		Male.	Female.		1866-67.	1867-68.	1866-67.	1867-68.	
				Infant.	Adult.	Infant.	Adult.								
Nerbudda	Chindwarrah	19	40,286	245	251	212	190	499	402	901	17.9	22.3	70.9	80.5	102.9
	Nimar	12	64,292	459	240	343	210	699	553	1,252	22.9	19.4	75.5	79.1	178.2
	Baitool	6	16,623	116	117	77	99	233	176	409	26.4	24.6	78.0	75.5	89.3
	Hoshungabad	7	40,458	250	345	252	251	595	503	1,098	.....	27.1	.....	34.5	84.2
	Nursingpore	4	19,121	67	124	52	76	191	128	319	21.9	16.6	53.0	67.0	59.5
Jubbulpore	Jubbulpore	6	72,182	472	780	372	537	1,252	909	2,161	35.1	29.0	64.4	72.6	64.0
	Saugor	21	94,964	603	772	458	619	1,375	1,077	2,452	17.4	25.8	79.3	78.3	76.2
	Dumoh	6	21,756	150	213	139	166	363	305	668	28.0	26.9	69.1	84.0	76.2
	Seonee	3	14,115	70	77	40	61	117	101	218	9.1	17.5	60.8	68.7	79.7
	Mundlah	5	10,816	77	84	60	68	161	128	289	25.8	26.7	86.6	79.5	90.1
Chutteesgarh	Raepore	10	35,719	291	364	211	200	658	420	1,078	18.0	30.1	58.3	63.8	88.1
	Belaspore	7	21,325	435	422	251	230	857	481	1,338	50.6	62.7	60.7	56.1	105.2
	Sumbulpore	1	9,453	40	75	43	47	115	90	205	30.3	21.6	64.0	78.2	68.0
	Nagpore	12	1,96,966	704	967	587	918	1,671	1,505	3,176	21.7	16.1	88.7	90.0	68.4
	Bhindarah	12	59,118	265	311	168	275	576	443	1,019	34.0	17.2	91.5	76.9	73.8
Nagpore	Chandah	11	53,267	443	335	158	252	528	410	938	19.9	17.6	85.4	77.6	59.7
	Wurdah	9	46,326	295	234	215	265	529	480	1,009	27.0	21.7	77.7	90.7	102.2
	Upper Godavery	4	11,362	35	90	32	44	125	76	201	35.2	17.6	87.7	60.8	50.0
	TOTAL	158	8,31,149	4,770	6,804	3,670	4,517	10,574	8,137	18,761	25.0	22.5	78.6	77.4	80.9

Table shewing Deaths in Rural Population of the Central Provinces.

DIVISIONS.	DISTRICTS.	No. of Circles.	Population.	DEATHS.				TOTAL.		Deaths per 1,000 of Population.		Proportion of Fe- male per 100 of Male deaths.		REMARKS.
				MALE.		FEMALE.		Male.	Female.	1866-67.	1867-68.	1866-67.	1867-68.	
				Infant.	Adult.	Infant.	Adult.							
NARSAPUR	Chindwarrah	1	20,209	37	30	29	20	67	49	16.0	5.7	70.0	73.1	132.0
	Nimar	22	1,47,354	689	290	496	280	979	776	22.0	11.9	95.6	79.2	207.8
	Baitool	2	2,31,780	714	638	706	615	1,402	1,321	17.0	11.7	83.5	94.2	108.9
	Hoshungabad	6	3,84,906	1,155	1,277	1,075	974	2,432	2,049	.....	11.6	.....	84.2	99.0
	Nursingpore	3	3,14,828	570	931	443	705	1,501	1,148	6.2	8.4	58.1	76.4	61.9
JABALPUR	Jabalpur	1	23,429	142	220	120	143	362	268	14.6	26.8	74.0	74.0	71.1
	Seonee	1	1,54,716	416	434	367	423	850	795	4.4	10.6	85.5	93.5	96.8
	Saugor	4	4,03,980	2,040	2,284	1,871	1,906	4,324	3,777	21.1	20.0	90.0	87.3	93.3
	Dumoh	1	1,32,270	368	490	334	400	858	734	10.9	12.0	88.1	85.5	78.8
	Mandla	17	2,06,581	746	839	599	676	1,585	1,275	.....	13.7	.....	80.4	88.7
CHHATTISGARH	Raepore	10	2,42,330	618	618	505	466	1,236	971	26.2	9.1	95.1	78.5	103.5
	Belaspore	7	5,09,216	2,094	2,172	1,742	1,609	4,266	3,351	7.5	14.9	50.0	78.5	101.4
	Sambulpore	5	2,58,653	711	718	592	623	1,429	1,215	8.1	10.2	70.0	85.0	97.1
NAGPUR	Wardah	3	1,30,902	326	260	257	215	586	472	.....	8.0	.....	80.5	122.7
	Upper Godavery	5	54,860	96	182	123	153	278	276	29.3	10.0	87.7	99.2	65.3
	TOTAL	88	32,17,989	10,722	11,433	9,259	9,218	22,155	18,477	12.7	12.6	78.9	83.4	97.0

456. According to the deaths registered in the Punjab during 1867, the total mortality was 18 per 1,000 from all causes. Registration of deaths, Punjab. Excluding cholera it was 15. Separating the towns having a population of 3,000 souls and upwards the death rate in them equalled 27 per 1,000 (according to the old census) and that of the rural population was only 18. According to sexes only 84 females died to every 100 males. If the city returns alone be taken, the proportion was 89 to 100. The relative number of the two sexes not having been ascertained, no conclusions can yet be drawn from these statements. These data have been extracted from an interesting report by Dr. DeRenzy, the Sanitary Commissioner for the Punjab, reviewing the mortuary statistics of the year, and suggesting measures for rendering them more accurate. From this report the two following Tables shewing the mortality in the rural and urban population of each district are also taken.

Register of Deaths arranged according to Cause in

Number.	NAME OF DISTRICTS.	POPULATION OF DISTRICTS.			1			2			3		
					DEATHS IN CHILD-BIRTH.			DEATHS			DEATHS		
					In Urban popu- lation.	In Rural popu- lation.	Total.	SUICIDE.			POISON.		
		Urban.	Rural.	Total.				In Urban popu- lation.	In Rural popu- lation.	Total.	In Urban popu- lation.	In Rural popu- lation.	Total.
1	Amballa ...	1,69,477	8,70,830	10,40,307	37	127	164	4	8	12	...	4	4
2	Amritsar ...	2,32,101	8,49,060	10,81,161	23	135	158	4	26	30	...	3	3
3	Bannu ...	18,497	2,28,327	2,46,824	...	24	24	...	1	1	...	...	...
4	Delhi ...	2,15,026	2,91,663	5,06,689	28	13	41	1	4	5	1	2	3
5	Dera Ghazi Khan	51,567	1,98,433	2,50,000	45	55	100	31	10	41	...	...	...
6	Dera Ismail Khan	86,090	2,59,920	3,46,022	17	51	68	...	1	1	...	1	1
7	Ferozepore ...	17,336	4,58,288	4,75,624	2	19	21	...	10	10	...	...	...
8	Gujeranwala ...	* 1,19,911	4,30,665	5,50,576	3	4	7	...	3	3	1	...	1
9	Gujerat ...	46,730	5,02,495	5,49,225	...	16	16	...	2	2	...	...	...
10	Gurdaspore ...	* 45,074	6,10,288	6,55,362	17	33	50	...	13	13	...	...	...
11	Gurgaon ...	* 71,058	6,25,588	6,96,646	14	25	39	...	7	7	...	...	...
12	Hazara ...	* 13,480	3,53,738	3,67,218	11	21	32	...	1	1	...	1	1
13	Hissar ...	50,984	2,80,902	3,40,886	3	5	8	2	...	2	...	...	...
14	Hoshiarpore ...	* 92,874	8,46,016	9,38,890	2	59	61	3	39	33	...	...	...
15	Jalandhur ...	* 1,66,512	6,28,252	7,94,764	8	20	28	2	9	11	1	...	1
16	Jhelum ...	39,912	3,55,988	3,95,900	3	10	13	1	3	4	...	...	...
17	Jhunj ...	31,200	2,67,734	2,98,934	6	20	26	...	...	...	...	...	...
18	Kangra ...	24,952	6,68,025	6,92,977	16	156	172	1	34	35	1	...	1
19	Karnaul ...	69,575	4,20,016	4,89,591	11	41	52	...	3	3	...	...	...
20	Kohat ...	* 6,064	1,31,115	1,40,299	3	5	8	...	...	...	...	...	...
21	Lahore ...	1,47,669	4,44,914	5,91,683	29	31	51	4	10	14	...	...	...
22	Ludiana ...	96,668	4,31,964	5,27,732	9	29	38	3	12	15	...	...	...
23	Montgomery ...	11,332	2,96,688	3,08,020	...	23	23	1	2	3	...	...	...
24	Mozuffergarh ...	29,251	2,21,853	2,51,104	...	...	...	1	1	2	...	1	1
25	Multan ...	61,063	3,50,390	4,11,363	...	53	53	...	...	...	...	...	...
26	Peshawar ...	2,33,795	2,16,304	4,50,099	7	7	14	...	...	...	...	...	...
27	Rawalpindi ...	67,672	4,86,979	5,53,750	9	58	67	5	1	6	...	...	...
28	Rhotak ...	1,66,383	3,97,053	4,73,446	12	17	29	7	4	11	...	...	...
29	Sialpore ...	59,028	2,52,672	3,02,700	9	15	24	...	...	...	...	1	1
30	Sinla ...	24,400	12,458	36,858	2	3	5	2	1	3	3	...	3
31	Sirsa ...	19,451	1,41,100	1,51,551	* 4	5	9	...	3	3	...	...	...
32	Syalkot ...	63,563	8,11,774	8,75,337	21	63	84	5	15	20	...	1	1
	TOTAL	25,29,901	1,32,60,711	1,57,90,612	312	1,143	1,485	77	214	291	7	14	21

N. B.—Population of Districts marked * has been entered

the Districts of the Punjab during the year 1867.

4			5			6			7			8		
FROM VIOLENCE.														
WOUNDING.			SNAKE BITES.			WILD BEASTS.			ACCIDENT.			TOTAL OF DEATHS BY VIOLENCE.		
In Urban popu- lation.	In Rural popu- lation.	Total.	In Urban popu- lation.	In Rural popu- lation.	Total.	In Urban popu- lation.	In Rural popu- lation.	Total.	In Urban popu- lation.	In Rural popu- lation.	Total.	In Urban popu- lation.	In Rural popu- lation.	Total.
...	8	8	2	20	22	3	7	10	19	147	165	27	194	221
...	0	0	2	31	33	...	5	5	20	170	190	35	241	279
1	19	20	...	6	6	...	...	...	4	45	49	5	71	76
1	3	4	5	7	12	2	7	9	55	52	107	65	75	140
...	2	2	0	12	18	...	2	2	40	20	60	77	55	132
...	3	3	...	20	20	...	1	1	1	47	48	1	73	74
...	10	10	2	8	10	...	1	1	3	13	16	5	42	47
8	19	27	14	33	47	...	1	1	9	66	75	32	122	154
3	77	80	12	19	31	...	2	2	...	...	...	15	104	115
2	21	23	4	...	4	...	2	2	15	...	15	21	96	57
2	5	7	2	8	10	2	1	3	31	150	180	37	180	217
...	19	19	...	5	5	...	2	2	8	63	71	8	91	99
...	...	...	4	9	13	...	...	...	15	23	38	21	32	53
...	1	1	...	31	31	...	15	15	24	116	140	27	229	253
2	6	8	2	5	7	...	...	...	31	163	194	34	123	161
...	4	4	...	22	22	...	...	...	6	17	23	7	46	53
...	2	2	...	17	17	1	2	3	2	55	57	3	104	109
...	9	9	8	29	37	...	3	3	11	165	176	21	240	261
...	62	62	...	10	10	...	24	24	15	48	63	15	147	162
2	20	22	2	5	7	...	1	1	4	10	14	8	36	44
25	4	32	8	15	53	3	7	10	14	73	87	57	139	196
1	3	4	...	4	4	...	...	...	12	75	87	16	91	110
...	1	1	1	12	13	1	2	3	1	24	25	4	41	45
...	2	2	1	30	31	...	3	3	3	4	7	8	41	49
...	...	...	...	21	21	...	...	...	16	84	100	16	105	121
2	22	24	...	3	3	...	...	...	3	13	16	5	38	43
4	17	21	4	37	41	...	1	1	15	104	118	28	159	187
1	6	7	5	13	18	...	3	3	26	81	107	39	107	146
...	7	7	1	34	35	3	10	13	20	50	70	24	111	135
...	1	1	...	1	1	...	...	...	3	2	5	8	5	13
2	...	2	2	12	14	1	3	4	8	39	38	13	48	61
...	1	1	...	...	...	...	...	...	40	205	245	45	222	267
59	366	426	90	539	629	16	105	121	482	2,111	2,593	731	3,349	4,080

according to the census taken on 10th January 1868.

Register of Deaths arranged according to Cause in

Number.	NAME OF DISTRICTS.	9			10			11			12		
		DEATHS FROM											
		SMALL-POX.			CHOLERA.			FEVER.			OTHER DISEASES.		
		In Urban popu- lation.	In Rural popu- lation.	Total.	In Urban popu- lation.	In Rural popu- lation.	Total.	In Urban popu- lation.	In Rural popu- lation.	Total.	In Urban popu- lation.	In Rural popu- lation.	Total.
1	Amballa	124	1,155	1,279	481	2,136	2,617	1,076	7,703	8,779	617	2,665	3,282
2	Amritsar	231	173	404	1,775	1,786	3,561	6,651	11,389	18,040	1,197	3,806	5,003
3	Bannu	24	341	365	46	586	632	173	2,005	2,178	118	1,029	1,147
4	Delhi	189	342	531	301	1,020	1,321	4,119	2,864	6,983	2,516	2,108	4,624
5	Dera Ghazi Khan	16	57	73	198	659	857	491	1,101	1,592	125	189	314
6	Dera Ismail Khan	198	866	1,064	2	230	232	673	2,563	3,236	195	110	305
7	Ferozepore	1	68	69	56	2,129	2,185	96	2,159	2,255	78	910	988
8	Gujeranwala	228	100	328	620	1,004	1,624	912	2,038	2,950	819	1,006	1,825
9	Gujerat	892	799	1,691	212	221	433	2,138	2,082	4,220	843	962	1,805
10	Gurdaspore	69	827	896	77	192	269	1,072	7,855	8,927	117	1,981	2,131
11	Gurgaon	52	56	108	608	2,540	3,148	932	2,660	3,592	818	1,193	2,011
12	Hazara	91	373	464	524	1,041	1,565	609	2,116	2,725	211	544	755
13	Hissar	9	19	28	1,689	1,576	3,265	1,955	1,671	3,626	310	365	675
14	Hoshiarpore	15	511	526	130	745	875	1,061	12,778	13,839	397	7,228	7,625
15	Jahmdhur	294	536	830	196	643	839	3,348	12,125	15,473	942	3,151	4,093
16	Jhelum	162	1,308	1,470	86	771	857	436	4,039	4,475	281	2,192	2,473
17	Jhang	55	362	417	9	94	103	206	1,172	1,378	262	1,006	1,268
18	Kangra	15	22	37	105	1,636	1,741	276	4,680	4,956	155	4,780	4,935
19	Karnaul	25	119	144	379	1,313	1,692	1,087	4,198	5,285	362	1,313	1,675
20	Kohat	6	38	44	646	530	1,176	194	417	611	41	127	168
21	Lahore	211	247	458	693	1,432	2,125	3,225	6,266	9,491	628	1,672	2,300
22	Ludianah	66	283	349	363	1,235	1,598	980	9,122	10,102	118	3,171	3,589
23	Montgomery	5	121	126	53	445	498	152	4,084	4,236	41	658	1,002
24	Mozuffergarh	18	28	46	142	1,092	1,234	285	2,543	2,828	58	168	226
25	Multan ... ..	...	10	10	51	565	616	182	3,599	3,781	92	874	966
26	Peshawar	345	309	654	1,374	535	1,909	833	1,304	2,137	37	87	124
27	Rawulpindee	60	1,557	1,617	682	2,010	2,722	710	6,143	6,883	180	2,103	2,283
28	Rotak	46	114	160	313	753	1,066	982	2,541	3,523	508	809	1,308
29	Shahpore	297	1,281	1,578	369	261	621	657	3,370	4,027	297	1,851	2,148
30	Sinla ... ..	...	1	1	153	130	283	125	92	217	44	93	137
31	Sirsa	5	13	18	25	1,052	1,077	227	2,123	2,350	134	665	799
32	Syalkot	106	1,380	1,486	102	562	664	719	7,406	8,125	510	6,104	6,704
TOTAL		4,959	17,239	22,198	12,382	39,764	52,146	36,912	1,36,769	1,73,681	13,684	55,334	69,018

the Districts of the Punjab during the year 1867.—concluded.

13			14			15			16			17		
DISEASE.			GRAND TOTAL OF DEATHS FROM ALL CAUSES.			DEATHS DISTRIBUTED ACCORDING TO RELIGION.						RATIO OF DEATHS PER MILL TO POPULATION.		
TOTAL OF DEATHS FROM DISEASE.						HINDOOS.			MAHOMEDANS.					
In Urban popu- lation.	In Rural popu- lation.	Total.	In Urban popu- lation.	In Rural popu- lation.	Total.	In Urban popu- lation.	In Rural popu- lation.	Total.	In Urban popu- lation.	In Rural popu- lation.	Total.	In Urban popu- lation.	In Rural popu- lation.	Total.
2,298	13,059	15,957	2,362	13,980	16,342	1,491	10,721	12,212	871	3,259	4,130	11	16	16
9,851	17,454	27,308	9,912	17,833	27,745	4,490	9,281	13,771	5,422	8,552	13,974	43	21	26
361	3,961	4,322	366	4,056	4,422	78	359	437	289	3,697	3,985	20	18	19
7,125	6,334	13,459	7,218	6,122	13,340	3,802	4,594	8,396	3,416	1,828	5,244	34	22	27
830	2,006	2,836	952	2,116	3,068	355	392	747	597	1,724	2,321	18	11	12
1,069	3,799	4,867	1,086	3,823	5,009	405	270	675	681	3,653	4,334	13	15	14
231	5,257	5,488	238	5,318	5,556	99	3,104	3,203	139	2,214	2,353	14	12	12
2,679	4,448	7,027	2,614	4,574	7,188	957	1,423	2,380	1,657	3,151	4,808	22	11	13
4,085	4,064	8,149	4,100	4,189	8,289	464	997	1,071	3,636	3,573	7,209	88	8	15
1,656	10,858	12,514	1,694	10,927	12,621	816	4,546	5,362	878	6,381	7,259	38	18	19
2,410	6,389	8,799	2,461	6,594	9,055	1,728	4,464	6,192	733	2,130	2,863	35	10	13
1,435	4,064	5,499	1,454	4,176	5,630	211	254	465	1,243	3,922	5,165	108	12	15
3,963	3,631	7,594	3,987	3,668	7,655	2,514	2,166	4,680	1,473	1,592	2,975	78	13	22
1,803	21,292	22,895	1,832	21,577	23,209	1,054	14,613	15,667	578	6,964	7,542	18	25	25
4,690	16,655	21,345	4,736	16,798	21,534	2,704	7,696	10,400	2,032	9,132	11,164	28	27	27
965	8,510	9,475	975	8,596	9,571	436	973	1,409	539	7,593	8,132	25	24	24
532	2,934	3,466	541	3,060	3,601	272	342	614	269	2,718	2,987	17	11	12
612	11,118	11,730	649	11,514	12,163	472	11,110	11,582	177	404	581	26	17	17
1,913	6,973	8,786	1,839	7,161	9,000	1,090	3,853	4,943	839	3,308	4,147	26	17	14
1,187	1,112	2,299	1,198	1,153	2,351	101	175	276	1,097	978	2,075	198	9	17
4,730	9,617	14,347	4,807	9,787	14,594	1,670	3,241	4,911	3,137	6,546	9,683	32	22	25
1,767	13,811	15,578	1,792	13,934	15,726	962	8,212	9,174	830	5,722	6,552	18	32	30
254	5,608	5,862	258	5,672	5,930	111	1,307	1,418	117	4,365	4,512	23	19	19
503	3,741	4,244	511	3,782	4,293	122	291	413	389	3,491	3,880	17	17	17
325	5,048	5,373	341	5,206	5,547	206	2,158	2,364	135	3,048	3,183	6	15	13
2,589	2,235	4,824	2,601	2,280	4,881	148	129	277	2,453	2,151	4,604	11	10	11
1,662	11,843	13,505	1,699	12,060	13,759	535	1,007	1,542	1,164	11,053	12,217	25	25	25
1,849	4,208	6,057	1,900	4,332	6,232	1,416	3,971	5,387	484	351	835	11	14	13
1,611	6,766	8,377	1,644	6,892	8,536	805	831	1,636	839	6,061	6,900	33	27	28
332	316	648	332	324	656	263	285	548	69	39	108	14	26	18
391	3,863	4,244	408	3,906	4,314	185	2,440	2,625	223	1,466	1,689	39	28	23
1,737	18,542	20,279	1,803	18,827	20,630	1,061	9,754	10,815	742	9,073	9,815	28	23	24
67,037	2,40,106	3,07,143	68,110	2,44,598	3,12,708	30,333	1,14,549	1,45,882	37,177	1,30,049	1,67,226	27	18	20

457. As shewn in last Annual Report the total number of vaccinations performed during 1866 in Bengal Proper, Assam, and Behar amounted to 1,52,099, of which 1,21,618 were reported successful. The extent and result of the operations of 1867 have been made the subject of a special report to the Government of Bengal, by the Inspector General of the Medical Department.

458. In the Central Provinces 34,100 persons were vaccinated during the year ending 30th April 1868, compared with 22,367, in the year previous. Of these 83 per cent. were reported to be certainly successful, and 10 per cent. more were probably so. In addition 43,259 persons were operated on by Civil Surgeons and Municipal Vaccinators with varying success. Dr. Brake reports that "there is scarcely a villager in the districts of Nagpore and Chindwara who has not had vaccination brought to his very door within the past two years," and he accordingly proposes to transfer his operations to other districts.

459. The returns of vaccination for the North-Western Provinces for the season 1867-68, shew a grand total of 1,98,317 known successful cases being an increase of 36,606 on the work of the year previous. The detailed statement of results is as follows:—

Vaccination Returns of the North-Western Provinces for the seasons of 1866-67 and 1867-68.

DIVISIONS.	Season.	NUMBER OF VACCINATORS.				Total number of Vaccinators.	Successful.	Unsuccessful.	Doubtful.	Result unknown.	TOTAL.	Average percentage successful.	Average number of operations by each vaccinator per annum.	REMARKS.
		Paid by Government.	Paid by Municipalities.	Paid by Local Funds.	Paid by native Landlords.									
Kumaon and Gurhwal ...	1866-67	10	...	5	...	15	28,137	1,024	1,233	1,551	31,945	92.67	354	The "percentage successful" is calculated on the total number, less the cases entered as "result unknown." Cost per head of each successful case, 6 annas and a fraction over 4 pie.
	1867-68	10	...	3	...	13	22,652	799	1,101	1,253	25,805	92.26	330	
Rohilkund ...	1866-67	30	9	2	...	41	51,198	3,379	2,459	2,578	59,609	89.76	290	
	1867-68	30	15	1	...	46	48,183	5,072	2,947	3,344	56,546	85.73	268	
Agra and Meerut ...	1866-67	60	9	4	4	73	50,318	6,163	1,306	4,521	62,208	87.22	170	
	1867-68	61	16	2	...	83	74,284	9,584	2,032	5,016	90,896	84.16	218	
Allahabad and Jhansi ...	1866-67	45	2	2	6	49	27,270	8,536	1,462	3,180	42,448	73.17	173	
	1867-68	56	2	...	...	64	39,301	11,411	1,817	4,931	57,460	74.80	185
Benares ...	1866-67	25	8	...	...	33	4,788	1,718	440	760	7,706	68.23	64
	1867-68	27	8	1	...	36	9,255	2,117	716	940	13,033	76.53	72	
Ajmere... ..	1866-67	...	...	...	...	...	...	...	...	...	...	...	...
	1867-68	4	2	...	...	6	4,642	396	316	959	6,313	66.70	210
GRAND TOTAL ...	1866-67	170	28	18	...	211	181,711	20,502	6,800	14,385	2,08,916	89.53	310	
N. W. Provinces ...	1867-68	188	43	7	10	248	198,317	22,859	8,929	16,443	2,53,048	83.33	213	

The progress of vaccination in the North-Western Provinces under Dr. Pearson's able management, has been very satisfactory. Several native chiefs, and large landholders have manifested an interest in it, and the large number of vaccinators

(amounting last year to 60) employed by the Municipalities shows that its benefits are being recognized. The Kumaon and Gurhwal Vaccine Depot has not only met the wants of the North-Western Provinces, but has also supplied vaccine virus to all parts of India. During 1867-68, 19,863 crusts and 4,147 tubes containing lymph were despatched from it.

460. During the past year, a special Vaccination Department was originated in Oude, and its efforts were chiefly concentrated on Vaccination in Oude. the city of Lucknow. The staff consisted of one Native Superintendent and thirteen Vaccinators. The number vaccinated amounted to 8,117 of which 2,360 were returned as successful, 590 unsuccessful, and 167 doubtful.

461. The operations of the special Vaccine establishment and of the Vaccinators attached to Dispensaries in the Punjab during Vaccination in the Punjab. 1867 are shewn in the following statements which have been taken from Dr. Garden's Report.

Numerical Return of Vaccinations performed at Dispensaries for the year 1867.

DISTRICTS.	RESULT.			Re-vaccinated.	Unknown.	TOTAL.	
	Successful.	Unsuccessful.	Doubtful.				
Abbotabad ...	1,573	374	295	594	85	2,921	Omitting "Re-vaccinated" and cases "Unknown," 72·3 per cent. are successful. Nearly 41 per cent. are females.
Bunnoo ...	983	241	86	282	56	1,648	
Dera Ghazi Khan ...	1,449	210	226	...	91	1,976	
Dera Ismail Khan ...	1,041	115	77	23	48	1,304	
Ferozepore ...	5,975	1,706	1,024	...	...	8,705
Gujeranwalla ...	476	37	15	26	29	583	
Gurdaspore ...	350	142	81	8	...	581	
Gujerat ...	2,947	915	600	...	21	4,483	
Gugaira ...	868	151	59	26	9	1,113	
Gurgaon ...	1,276	415	236	2	...	1,929	
Hissar ...	1,084	326	141	196	129	1,876	
Jhung ...	756	147	129	18	94	1,144	
Jhelum ...	1,908	207	439	...	...	2,554
Kuhror ...	93	76	53	...	41	263	
Kohat* ...	76	25	7	...	...	108
Kurnaul ...	469	171	91	14	...	745	
Leis ...	1,199	251	74	...	52	1,576	
Lodianah ...	688	77	17	...	...	782
Murree ...	370	102	59	78	13	622	
Mooltan ...	511	178	...	15	...	704	
Mozuffurgurh ...	381	89	13	3	41	527	
Murdan ...	1,241	892	722	242	141	3,238	
Peshawar ...	1,038	81	90	...	...	1,209
Pinddadun Khan ...	3,666	553	294	...	...	4,513
Rawulpindi ...	267	77	89	...	...	433
Rhotuk* ...	* 1,410	446	236	...	...	2,092
Rajanpore ...	1,180	274	108	21	64	1,647	
Syalkot ...	...	...	...	...	...	...
Shahpore ...	2,920	613	791	23	80	4,427	
Sirsa ...	5,905	959	262	569	33	7,728	
Amballa ...	245	44	26	...	...	315
TOTAL ...	42,345	9,894	6,340	2,140	1,027	61,746	

* Returns for Kohat and Rhotuk for November and December not received.

The Returns for Syalkote were by mistake included in those for the Punjab Vaccine Establishment.

Numerical Return of Vaccinations performed by the Punjab Vaccine Establishment for the year 1867.

MONTHS.	RESULT.			Re-vaccinated.	Unknown.	TOTAL.	REMARKS.
	Successful.	Unsuccessful.	Doubtful.				
January	22,118	684	321	189	71	23,383	Omitting cases "Re-vaccinated" and "Unknown," 95·01 per cent. are successful. 49·3 per cent. females.
February	28,639	859	498	92	80	30,168	
March	7,529	265	297	89	52	8,232	
April	9,079	242	278	275	16	9,890	
May	7,116	266	392	318	27	8,119	
June	3,493	155	236	122	44	4,050	
July	175	11	9	...	...	195
August	159	18	9	4	2	192	
September	161	16	7	...	...	184
October	7,522	185	110	14	3	7,834	
November	20,331	672	277	47	99	21,426	
December	20,080	587	233	70	177	21,147	
TOTAL	1,26,402	3,960	2,667	1,220	571	1,34,820	

Numerical Return of Vaccinations performed in the Punjab for the year 1867.

	RESULT.			Re-vaccinated.	Unknown.	TOTAL.	REMARKS.
	Successful.	Unsuccessful.	Doubtful.				
Vaccinations performed by the Punjab Vaccine Establishment...	1,26,402	3,960	2,667	1,220	571	1,34,820	95·01 successful.
Vaccinations performed by Dispensary Vaccinators ...	42,345	9,894	6,340	2,140	1,027	61,746	72·3 successful.
TOTAL	1,68,747	13,854	9,007	3,360	1,598	1,96,566	

462. Since last Annual Report, a very important step has been taken in Appointment of Sanitary sanitary administration. A Health Officer has been Commissioners. appointed to each Local Government and Administration throughout this Presidency—Bengal Proper, the North-Western Provinces, Oude, the Central Provinces, the Punjab and British Burmah. A separate Sanitary Commissioner has also been sanctioned for Assam, but the appointment has not yet been filled up. The precise duties of these new Sanitary Commissioners, and the manner in which they can best advance the health of the people, have for some time been under the consideration of the Government, and orders on the subject will shortly be issued. The importance of these new appointments and the benefit which may be anticipated from them, both to the population of the country and also indirectly to the European Army, can hardly be over-estimated.

J. M. CUNINGHAM, M. D.,

Offg. Sanitary Commr. with the Govt. of India.

ANNUAL RETURNS

OF THE

EUROPEAN AND NATIVE ARMIES

AND OF THE

JAIL POPULATION OF THE BENGAL PRESIDENCY,

FOR THE YEAR 1867.

COMPILED AND SYSTEMATICALLY ARRANGED FROM THE ORIGINAL DOCUMENTS BY

JAMES L. BRYDEN, M.D.,

ASST. SURGEON, BENGAL MEDICAL SERVICE;

IN CHARGE OF THE STATISTICAL BRANCH OFFICE OF THE INSPECTOR GENERAL, BENGAL MEDICAL DEPARTMENT.

1867.

- | | |
|--|---------------------------|
| 1.—EUROPEAN TROOPS ... | ... Tables I—XVII. |
| 2.—NATIVE ARMY ... | ... „ I—XIV. |
| 3.—JAIL POPULATION ... | ... „ I—XII. |
| 4.—DETAIL of ADMISSIONS and DEATHS of the EUROPEAN and
NATIVE ARMIES, and of the JAIL POPULATION. | |

EUROPEAN TROOPS, 1867.

EUROPEAN TROOPS, 1867.

I.

TABLE showing the SICKNESS and MORTALITY among the EUROPEAN TROOPS serving in the BENGAL PRESIDENCY during the Year 1867, and the prevalence of the principal Diseases in each Month of the Year.

MONTHS.						CAUSES OF DEATHS IN HOSPITAL.																					
	Average Strength.	Average number daily sick.	Number daily sick per cent. of Strength.	Number of Deaths.	Died per 1000 of Strength.	Cholera.	Smallpox.	Fever, Intermittent.	Fever, Remittent.	Fever, Continued.	Apoplexy.	Delirium Tremens.	Dysentery, Acute.	Dysentery, Chronic.	Diarrhoea.	Hepatitis, Acute.	Hepatitis, Chronic.	Spleen Disease.	Respiratory Diseases.	Heart Disease.	Phthisis Pulmonalis.	Dropsy.	Scurvy.	Atrophy and Anæmia.	Wounds and Accidents.	All other Causes.	Died out of Hospital.
January ...	35,101	1,753	4.99	46	...	1	1	4	3	1	...	1	2	1	2	7	4	...	6	3	...	1	...	...	...	1	...
February ...	35,328	1,747	4.96	48	...	...	...	4	...	7	1	2	1	2	2	2	2	...	6	4	...	1	...	...	...	...	...
March ...	35,070	1,768	5.10	24	...	...	...	2	...	...	...	...	2	1	...	2	2	...	1	1	...	...	1	...	...	...	...
April ...	35,198	1,835	5.31	43	...	6	3	2	3	4	3	2	2	1	...	1	2	...	3	6	...	...	...	...	...	...	...
May ...	34,910	1,855	5.31	153	...	119	3	2	1	3	3	2	2	1	1	...	4	...	1	4	...	...	...	...	1	...	...
June ...	34,734	1,780	5.13	122	...	78	...	...	...	8	9	1	2	2	2	...	4	...	...	...	...	...	...	...	...	...	...
July ...	34,922	1,916	5.54	164	...	63	...	6	1	4	4	2	2	2	2	...	4	...	1	...	...	...	...	...	...	...	...
August ...	34,328	2,031	5.91	145	...	95	...	...	1	3	6	2	2	2	2	...	4	...	2	4	...	...	...	...	...	...	...
September ...	33,987	2,007	6.13	152	...	112	...	...	7	6	6	12	1	11	3	2	6	3	...	3	4	...	...	...	...	...	...
October ...	33,786	1,909	5.63	78	...	1	...	2	2	3	3	2	2	15	6	2	12	5	...	3	3	...	...	...	1	...	...
November ...	31,087	1,801	5.15	45	...	4	...	2	2	3	1	...	3	...	1	3	5	...	4	4	...	...	...	1	...	...	...
December ...	33,313	1,333	4.07	40	...	...	...	2	5	...	1	...	2	1	...	6	3	...	1	3	...	...	...	1	...	...	...
						479	4	25	25	41	83	14	40	19	14	40	40	...	20	40	47	5	1	6	10	6	...
Died per 1000 of the Average Strength.																											
For the year	33,784*	1808	5.34	1071	30.95	13.84	.13	2.63	2.40	.40	1.97	.40	2.57	...	.84	1.16	1.36	.14	.08	.17	.20	1.03	1.30	...	...	...	...

CAUSES OF ADMISSIONS.	NUMBER OF ADMISSIONS INTO HOSPITAL IN EACH MONTH.												Total Admissions during the Year.	Admitted per cent. of Average Strength.	Died per cent. of Admissions.
	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.			
Cholera	2	...	...	8	107	132	106	134	137	1	4	1	723	2.00	25.07
Smallpox	5	1	7	5	4	3	2	...	...	...	1	1	20	.06	12.50
Fever, Intermittent	644	408	423	733	695	791	1,170	919	1,403	2,435	1,060	1,130	12,595	36.40	9.79
" Remittent	27	19	59	73	48	46	72	74	140	189	54	30	609	1.84	...
" Continued	51	41	90	330	354	319	477	304	352	253	73	75	2,708	7.93	...
Apoplexy	...	3	...	2	7	24	136	9	15	3	1	3	203	.60	41.25
Delirium Tremens	10	6	10	6	14	10	8	11	13	21	15	14	144	.42	...
Dysentery	71	87	77	109	89	68	137	161	201	160	70	86	1,276	3.75	6.23
Diarrhoea	117	136	143	244	256	235	530	584	435	209	216	146	3,361	9.93	...
Hepatitis	149	105	137	167	153	185	208	179	108	169	113	96	1,827	5.39	6.07
Spleen Disease	16	14	30	20	20	21	25	11	21	23	11	8	224	.66	...
Respiratory Diseases	308	253	184	205	106	151	185	143	153	157	195	233	2,393	6.93	1.25
Phthisis Pulmonalis	23	13	20	23	19	33	36	33	40	46	21	23	340	.99	20.52
Scurvy	4	...	1	7	5	5	4	1	...	...	3	...	34	.10	...
Rheumatism	240	280	241	308	351	209	244	196	207	204	161	148	2,638	7.82	...
General Diseases	740	595	616	745	477	394	427	318	273	363	363	454	5,764	16.95	...
Eye Diseases	69	61	68	123	92	92	108	151	144	117	57	48	1,134	3.33	...
Abscess and Ulcer	253	273	241	283	207	209	341	250	233	266	230	170	2,990	8.64	...
Wounds and Accidents	280	271	245	858	268	237	260	170	198	305	263	321	3,368	9.62	...
All other Causes	448	477	507	664	550	583	699	612	697	633	353	394	6,627	19.15	...
	3,466	3,085	3,184	4,419	3,908	3,717	5,175	4,360	4,918	5,545	3,991	3,379	49,976		
Admitted per cent. of the Average Strength in each Month.															
	9.97	8.98	9.09	12.86	11.08	10.70	14.96	12.37	14.40	16.91	12.53	11.93	141.25		

* The Admission-rates and Death-rates in this Table are calculated on a Strength of 34,000, the average of the 10 months from January to October. If men were withdrawn from the Bengal Presidency in the last weeks of the year, and to replace those no substitutes had been required up to the close of 1867, the Average of the 10 months very nearly approximates to the Strength actually under observation throughout the year. In Table XV. showing the Distribution of the Army on 31st Jan. the Strength is noted as 34,000.

EUROPEAN TROOPS 1867.

II

TABLE showing the SICKNESS and MORTALITY among the EUROPEAN TROOPS serving in BERGAL PROVINCE during the Year 1867, and the prevalence of the principal Diseases in each Month of the Year.

MONTHS.	Average Strength.	Average number daily sick.	Number daily sick per cent. of Strength.	Number of Deaths.	Died per 1000 of Strength.	CAUSES OF DEATHS IN HOSPITAL.																		Died out of Hospital.			
						Cholera.	Smallpox.	Fever, Intermittent.	Fever, Remittent.	Fever, Continued.	Apoplexy.	Delirium Tremens.	Dysentery, Acute.	Dysentery, Chronic.	Diarrhoea.	Hepatitis, Acute.	Hepatitis, Chronic.	Spleen Disease.	Respiratory Diseases.	Heart Diseases.	Phthisis Pulmonalis.	Dropsy.	Scurvy.		Atrophy and Anæmia.	Wounds and Accidents.	All other Causes.
January	1,993	110.	5.51	2	...	...	...	...	...	...	...	...	...	...	...	1	...	...	1	...	...	...	...	...	...	...	...
February	1,772	103	5.81	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
March	1,712	99	5.78	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
April	1,696	116	6.88	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
May	1,692	137	8.14	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
June	1,691	125	7.40	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
July	1,694	140	8.31	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
August	1,693	163	9.68	4	...	...	...	...	...	...	1	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...
September	1,399	104	7.60	5	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
October	816	60	7.35	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
November	1,230	77	6.21	5	...	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
December	389	66	5.08	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
						4	...	...	...	...	1	1	2	1	1	5	3	...	1	...	...	1	...	1	1	1	...
Died per 1000 of the Average Strength.																											
For the year	1,845*	107	6.09	23	14.38	2.50	...	...	...	...	.62	.62	1.87	.62	5.00	...	.63	...	...	.63	...	.63	.63	.63	.63	.63	...

CAUSES OF ADMISSIONS.	NUMBER OF ADMISSIONS INTO HOSPITAL IN EACH MONTH.												Total Admissions during the Year.	Admitted per cent. of Average Strength.	Died per cent. of Admissions.
	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.			
Cholera	...	...	...	...	1	...	...	1	...	...	3	...	5	.31	80.00
Smallpox	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Fever, Intermittent	22	23	14	34	45	25	63	75	37	23	9	9	378	23.68	...
Remittent	3	...	...	4	1	...	5	1	4	1	...	...	18	1.12	...
Continued	3	3	4	11	11	17	62	26	17	2	1	3	160	9.98	...
Apoplexy	...	1	...	...	1	...	...	...	...	...	...	...	...	...	25.00
Delirium Tremens	1	...	3	2	2	1	...	...	...	2	2	3	19	1.19	5.56
Dysentery	16	5	9	7	6	7	11	19	21	6	8	5	115	7.19	2.61
Diarrhoea	14	20	7	15	19	14	24	29	10	5	34	9	200	12.99	.50
Hepatitis	15	8	12	16	6	12	12	13	10	7	6	6	123	7.98	6.50
Spleen Disease	2	2	1	3	...	1	4	3	1	1	...	...	17	1.08	...
Respiratory Diseases	16	9	4	8	10	7	22	8	6	5	20	7	123	7.98	.63
Phthisis Pulmonalis	1	1	...	...	1	2	...	4	3	1	1	1	15	.93	...
Scurvy	...	...	...	1	...	...	...	...	...	...	...	...	1	.05	...
Rheumatism	13	6	18	11	...	7	14	13	8	...	7	13	127	8.04	...
Venereal Diseases	53	26	29	53	43	19	33	29	9	14	50	85	398	24.28	...
Eye Diseases	6	1	1	4	2	2	...	4	3	1	2	2	27	1.68	...
Abscess and Ulcer	23	12	20	23	21	12	14	18	8	3	24	12	190	11.98	.29
Wounds and Accidents	27	18	25	27	28	11	17	8	14	15	9	14	228	13.94	...
All other Causes	44	60	40	58	65	48	59	51	53	26	27	26	557	34.51	...
	265	197	197	277	270	185	332	308	205	118	204	120	2,694		
Admitted per cent. of the Average Strength in each Month.															
	13.68	11.12	11.50	16.43	16.05	10.94	19.72	17.84	14.99	14.66	16.45	10.70	147.78		

* Death-rates and Admission-rates calculated on 1,800, the Average Strength of the 10 months from January to October.

EUROPEAN TROOPS, 1897

III.

TABLE showing the SICKNESS and MORTALITY among the EUROPEAN TROOPS serving in the DINAPOR, BAKRES OUDE, and CANNORE DISTRICTS during the Year 1897, and the prevalence of the principal Diseases in each Month of the Year.

MONTHS.	Average Strength.	Average number daily sick.	Number daily sick per cent. of Strength.	Number of Deaths.	Died per 1000 of Strength.	CAUSES OF DEATHS IN HOSPITAL.																					
						Cholera.	Smallpox.	Fever, Intermittent.	Fever, Remittent.	Fever, Continued.	Apoplexy.	Delirium Tremens.	Dysentery, Acute.	Dysentery, Chronic.	Diarrhoea.	Hepatitis, Acute.	Hepatitis, Chronic.	Spleen Disease.	Respiratory Diseases.	Heart Disease.	Phthisis Pulmonalis.	Dropsy.	Scurvy.	Atrophy and Anæmia.	Wounds and Accidents.	All other Causes.	Deaf of Hospital.
January ...	9,044	442	4.89	11	...	...	1	...	3	...	...	1	1	...	...	3	1	...	...	1	...	...	...	...	...	1
February ...	9,343	422	4.52	9	...	...	...	...	...	1	...	1	...	...	1	...	1	...	1	...	...	...	...	...	...	1
March ...	9,804	423	4.32	9	...	1	2	1	1	1	...	...	1	...	...	...	1	...	...	1	...	1	...	...	...	1
April ...	9,843	422	4.30	9	...	1	2	1	1	1	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	1
May ...	9,805	467	4.76	12	...	3	...	...	1	1	1	...	...	...	...	...	3	...	...	...	1	...	...	...	...	1
June ...	9,890	450	4.56	15	...	...	...	...	1	1	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...	1
July ...	9,797	504	5.15	19	...	3	...	...	1	1	...	...	...	...	...	...	4	...	...	...	1	...	...	...	...	1
August ...	9,755	533	5.46	24	...	24	...	...	1	...	...	1	...	...	...	...	1	...	...	...	1	...	...	...	...	1
September ...	9,324	541	5.81	14	...	5	...	...	2	...	...	1	...	...	1	...	...	...	...	...	1	...	...	...	...	1
October ...	9,131	519	5.69	19	...	1	...	...	...	...	...	2	...	...	3	1	...	4	...	...	1	...	...	...	...	1
November ...	7,802	408	5.23	9	...	...	...	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...	...	...	...	1
December ...	5,973	303	4.97	5	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1
						36	3	1	9	5	9	5	8	4	2	12	16	...	2	11	11	...	1	1	4	14	
Died per 1000 of the Average Strength.																											
For the year	9,123*	476	4.97	164	17.12	9.76	.31	1.57	.94	.53	1.25	.21	2.92	...	.21	1.15	1.15	...	.10	.10	.48	1.47	1.08	...	...	1.08

CAUSES OF ADMISSIONS.	NUMBER OF ADMISSIONS INTO HOSPITAL IN EACH MONTH.												Total Admissions during the Year.	Admitted per cent. of Average Strength.	Died per cent. of Admissions.
	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.			
Cholera ...	...	...	...	2	3	...	5	37	7	...	1	...	55	.59	65.45
Smallpox ...	...	...	...	2	1	...	...	...	...	...	...	...	3	.03	37.50
Fever, Intermittent ...	71	56	64	102	113	82	155	182	176	290	207	144	1,612	16.23	...
" Remittent ...	10	6	33	46	33	20	39	30	61	98	23	6	364	4.11	...
" Continued ...	13	13	34	71	40	49	93	64	51	20	18	14	460	5.01	...
Apoplexy ...	...	...	...	...	1	2	6	3	4	1	...	...	17	.18	53.00
Delirium Tremens ...	3	1	1	...	3	3	1	1	1	...	5	4	33	.33	17.00
Dysentery ...	15	24	37	40	36	25	28	47	46	49	14	21	323	3.66	5.19
Diarrhoea ...	19	32	45	55	35	33	94	130	87	55	58	41	684	7.14	...
Hepatitis ...	43	25	33	41	43	51	61	41	67	57	31	25	608	6.30	6.21
Spleen Disease ...	1	1	6	3	6	1	6	3	3	5	1	1	36	.37	...
Respiratory Diseases ...	45	53	35	47	33	32	35	30	43	45	27	30	453	4.73	...
Phthisis Pulmonalis ...	2	3	5	9	3	9	13	8	15	13	4	6	90	.94	13.23
Scurvy ...	...	...	...	...	...	...	...	...	...	...	...	...	7	.07	14.29
Rheumatism ...	47	40	51	55	54	53	72	64	54	52	30	34	614	6.41	...
Veneral Diseases ...	247	177	211	239	173	126	186	111	101	130	105	119	1,665	17.47	...
Eye Diseases ...	15	19	19	32	25	35	42	41	35	30	15	5	313	3.27	...
Abscess and Ulcer ...	76	34	68	79	66	87	123	71	70	93	63	44	900	9.29	...
Wounds and Accidents ...	89	54	77	87	64	66	71	51	51	95	73	82	832	8.68	...
All other Causes ...	103	126	141	177	123	130	202	190	194	217	121	111	1,833	18.98	...
	770	723	864	1,069	844	776	1,172	1,063	1,066	1,263	794	687	11,106		
Admitted per cent. of the Average Strength in each Month.															
	8.51	7.72	8.79	11.06	8.66	7.69	11.96	10.92	11.33	13.90	10.18	11.70	115.92		

* Death-rates and Admission-rates calculated on 8890, the Average Strength of the 10 months from January to October.

EUROPEAN TROOPS, 1867

IV.

TABLE showing the SICKNESS and MORTALITY among the EUROPEAN TROOPS serving in the MEERUT and BOHLGUND DISTRICTS during the Year 1867, and the prevalence of the principal Diseases in each Month of the Year.

MONTHS.	Average Strength.	Average number daily sick. #	Number daily sick per cent. of Strength.	Number of Deaths.	Died per 1000 of Strength.	CAUSES OF DEATHS IN HOSPITAL.																	Died out of Hospital.				
						Cholera.	Smallpox.	Fever, Intermittent.	Fever, Remittent.	Fever, Continued.	Apoplexy.	Delirium Tremens.	Dysentery, Acute.	Dysentery, Chronic.	Diarrhoea.	Hepatitis, Acute.	Hepatitis, Chronic.	Spleen Disease.	Respiratory Diseases.	Heart Disease.	Phthisis Pulmonalis.	Dropsy.		Scurvy.	Atrophy and Anæmia.	Wounds and Accidents.	All other Causes.
January ...	4,529	313	6.91	5	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...
February ...	4,504	323	7.17	11	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1
March ...	4,597	324	7.05	8	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
April ...	4,904	355	7.24	6	...	1	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...
May ...	4,897	339	6.92	10	...	...	...	1	...	...	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...
June ...	4,823	328	6.70	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
July ...	4,883	329	6.74	10	...	...	...	1	...	...	3	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
August ...	4,667	334	6.88	45	...	39	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...
September ...	4,751	361	7.60	109	...	95	...	...	...	3	6	...	2	1	...	...	...	...	...	...	...	...	...	...	...	...	...
October ...	4,657	335	7.19	14	...	1	...	...	...	...	...	...	7	...	...	...	...	...	...	...	...	...	...	...	...	...	...
November ...	3,306	214	6.47	6	...	...	...	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...
December ...	2,888	148	4.92	6	...	...	...	...	...	1	...	...	2	...	...	...	...	...	...	...	1	...	...	...	...	...	...
						140	...	9	2	6	9	3	13	4	...	4	3	...	6	7	7	2	...	...	...	10	6
Died per 1000 of the Average Strength.																											
For the year	4,472*	308	6.49	231	48.66	29.49	...	3.58	1.90	.63	...	3.53	...	1.47	...	1.25	1.48	1.48	.42	...	.31	...	...	...	2.11	1.06	

CAUSES OF ADMISSIONS.	NUMBER OF ADMISSIONS INTO HOSPITAL IN EACH MONTH.												Total Admissions during the Year.	Admitted per cent. of Average Strength.	Died per cent. of Admissions.
	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.			
Cholera ...	...	...	...	1	2	...	5	43	107	1	...	...	189	3.35	97.48
Smallpox ...	1	...	3	2	3	2	...	...	...	...	...	...	11	.23	...
Fever, Intermittent ...	161	89	73	107	66	79	114	62	140	157	100	53	1,309	25.47	...
Remittent ...	...	4	9	13	12	8	12	21	24	17	7	3	130	2.74	1.11
Continued ...	4	4	2	10	15	12	23	25	30	60	8	6	199	4.19	...
Apoplexy ...	...	1	...	...	1	...	3	...	5	...	...	1	11	.23	61.81
Delirium Tremens ...	...	...	...	3	2	...	3	...	2	...	...	1	20	.44	18.00
Dysentery ...	9	6	6	24	11	13	16	23	37	21	13	9	187	3.64	9.09
Diarrhoea ...	16	6	12	46	35	24	62	89	124	44	24	10	491	10.24	...
Hepatitis ...	20	14	15	33	33	30	45	34	23	27	9	4	237	6.05	3.44
Spleen Disease ...	3	1	2	7	1	3	4	1	5	6	...	...	33	.69	...
Respiratory Diseases ...	49	29	22	44	57	28	32	25	16	22	12	22	336	7.30	1.00
Phthisis Pulmonalis ...	5	3	4	6	4	6	5	5	5	11	4	1	59	1.24	11.67
Scurvy ...	...	...	...	2	2	2	1	1	...	1	1	...	10	.21	...
Rheumatism ...	44	40	49	101	65	66	63	35	41	45	23	16	568	12.39	...
Veneral Diseases ...	107	92	89	129	64	69	70	57	59	63	33	67	918	19.24	...
Eye Diseases ...	22	11	13	25	14	20	21	39	38	29	7	5	336	7.01	...
Abscess and Ulcer ...	35	40	34	51	23	39	60	31	42	49	22	12	487	9.00	.56
Wounds and Accidents ...	40	33	27	47	36	32	43	21	23	36	30	24	391	8.24	...
All other Causes ...	77	52	73	122	99	101	99	89	112	109	61	21	1,006	21.17	...
	582	424	493	773	545	532	671	623	829	719	345	254	6,739		
Admitted per cent. of the Average Strength in each Month.															
	12.85	9.41	9.42	15.76	11.18	10.87	13.74	12.63	17.45	15.43	10.43	8.79	141.75		

* Death-rates and Admission-rates calculated on 4,747, the Average Strength of the 10 months from January to October.

EUROPEAN TROOPS, 1867

V.

TABLE showing the SICKNESS and MORTALITY among the EUROPEAN TROOPS serving in the AGRA DISTRICT and the CENTRAL INDIA during the Year 1867, and the prevalence of the principal Diseases in each Month of the Year.

MONTHS.						CAUSES OF DEATHS IN HOSPITAL.																			Died out of Hospital.			
	Average Strength.	Average number daily sick.	Number daily sick per cent. of Strength.	Number of Deaths.	Died per 1000 of Strength.	Cholera.	Smallpox.	Fever, Intermittent.	Fever, Remittent.	Fever, Continued.	Apoplexy.	Delirium Tremens.	Dysentery, Acute.	Dysentery, Chronic.	Diarrhoea.	Hepatitis, Acute.	Hepatitis, Chronic.	Spleen Disease.	Respiratory Diseases.	Heart Disease.	Phthisis Pulmonalis.	Dropsy.	Scurvy.	Atrophy and Anemia.		Wounds and Accidents.	All other Causes.	
January ...	4,479	274	6.12	2	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	1	...	...	...	...	1	...
February ...	4,637	299	6.45	4	...	...	...	...	...	...	...	1	...	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...
March ...	4,303	247	5.68	2	...	...	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...
April ...	4,297	258	6.00	6	...	...	...	1	...	...	1	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...
May ...	4,288	260	6.07	10	...	...	...	...	...	...	3	...	...	...	...	...	1	...	...	...	3	...	...	...	...	...	...	...
June ...	4,274	280	6.55	6	...	...	...	...	...	1	3	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...
July ...	4,280	264	6.20	15	...	...	...	...	...	...	10	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...
August ...	4,244	269	6.31	20	...	13	...	...	...	...	...	1	1	...	1	1	1	...	...	1	...	...	...	...	...	...	...	...
September ...	4,318	328	7.59	13	...	...	...	...	6	...	1	...	3	...	...	2	...	...	...	...	1	...	...	...	...	...	...	...
October ...	4,179	292	6.97	17	...	...	...	...	...	3	1	...	...	...	...	1	4	...	...	1	...	...	...	...	...	...	...	...
November ...	3,853	278	7.23	6	...	...	...	...	...	...	...	...	2	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...
December ...	3,868	316	8.15	5	...	...	...	...	1	...	...	...	...	1	...	...	1	...	...	...	1	...	1	...	...	...	...	...
						14	...	4	6	3	19	4	6	3	3	9	4	...	2	5	6	1	...	...	...	...	6	9
Died per 1000 of the Average Strength.																												
For the year	4,246	269	6.34	105	24.73	3.30	...	3.06	4.24	.94	2.12	.71	3.06	...	.47	1.19	1.41	.24	...	...	...	...	...	...	...	1.88	2.12	

CAUSES OF ADMISSIONS.	NUMBER OF ADMISSIONS INTO HOSPITAL IN EACH MONTH.												Total Admissions during the Year.	Admitted per cent. of Average Strength.	Died per cent. of Admissions.
	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.			
			
Cholera	...	...	...	...	...	1	5	13	4	...	...	...	23	.54	60.87
Smallpox	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Fever, Intermittent	153	122	83	203	174	174	280	180	339	529	622	323	3,070	72.30	...
" Remittent	1	7	8	2	2	1	1	12	23	44	18	9	133	3.13	...
" Continued	4	7	17	34	27	23	41	43	67	64	11	11	352	8.29	...
Apoplexy	...	...	...	1	3	6	51	1	1	...	...	...	63	1.49	25.57
Delirium Tremens	5	3	3	2	3	1	...	...	4	3	2	3	30	.71	12.23
Dysentery	8	7	8	5	7	3	18	16	29	20	6	11	138	3.26	6.23
Diarrhoea	19	19	27	23	10	22	51	67	53	37	35	33	393	9.30	...
Hepatitis	16	18	18	14	27	24	18	19	19	20	21	9	223	5.25	5.88
Spleen Disease	2	4	5	6	3	6	1	2	4	3	2	3	41	.98	...
Respiratory Diseases	24	27	29	19	19	22	18	22	19	23	49	50	319	7.51	...
Phthisis Pulmonalis	4	...	...	6	1	5	4	5	4	6	2	2	33	.80	18.80
Scurvy	2	...	...	...	1	...	...	...	...	1	...	...	4	.10	...
Rheumatism	33	40	32	21	26	17	35	21	24	18	10	14	290	6.80	...
Veneral Diseases	118	111	83	100	72	65	77	48	32	39	49	57	850	20.00	...
Eye Diseases	11	9	5	12	11	4	11	21	26	19	11	11	151	3.56	...
Abscess and Ulcer	42	30	34	35	33	43	40	40	31	41	27	30	418	9.80	...
Wounds and Accidents	49	40	46	50	36	24	27	20	31	34	37	35	439	10.10	...
All other Causes	68	70	61	99	73	89	89	61	90	82	67	60	919	21.64	...
	538	514	466	631	528	530	739	622	805	982	887	650	7,874		
Admitted per cent. of the Average Strength in each Month.															
	12.46	11.11	10.80	14.48	12.33	12.40	17.35	14.66	19.09	22.50	22.50	16.80	185.44		

EUROPEAN TROOPS, 1867.

VI.

TABLE showing the SICKNESS and MORTALITY among the EUROPEAN TROOPS serving in the PUNJAB during the Year 1867, and the prevalence of the principal Diseases in each Month of the Year.

MONTHS.	CAUSES OF DEATHS IN HOSPITAL.																			Died out of Hospital.							
	Average Strength.	Average number daily sick.	Number daily sick per cent. of Strength.	Number of Deaths.	Died per 1000 of Strength.	Cholera.	Smallpox.	Fever, Intermittent.	Fever, Remittent.	Fever, Continued.	Apoplexy.	Delirium Tremens.	Dysentery, Acute.	Dysentery, Chronic.	Diarrhoea.	Hepatitis, Acute.	Hepatitis, Chronic.	Spleen Disease.	Respiratory Diseases.		Heart Disease.	Phthisis Pulmonalis.	Dropsy.	Scurvy.	Atrophy and Anæmia.	Wounds and Accidents.	All other Causes.
					
January ...	11,898	470	3.95	16	...	...	...	1	...	1	...	...	1	...	...	2	2	...	5	1	1	...	...	...	...	...	2
February ...	12,844	450	3.46	16	...	...	...	...	...	4	1	...	1	...	...	...	1	...	...	2	1	...	...	...	...	...	2
March ...	13,983	549	3.93	7	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
April ...	14,180	575	4.05	21	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
May ...	14,146	630	4.38	119	...	113	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
June ...	14,014	616	4.39	98	...	78	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
July ...	13,939	676	4.85	108	...	57	...	4	...	...	31	...	3	1	...	2	2	...	...	...	...	...	...	...	...	...	...
August ...	13,904	717	5.20	38	...	20	...	...	...	...	3	...	2	...	1	3	2	...	...	...	...	...	...	...	...	...	...
September ...	13,744	728	5.30	37	...	11	...	...	...	...	2	1	4	...	...	2	2	...	...	...	...	...	...	...	...	...	...
October ...	13,646	674	4.94	25	...	...	...	...	...	...	1	...	3	...	...	1	...	...	...	...	...	...	...	...	...	...	...
November ...	12,017	513	4.27	6	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...
December ...	11,545	445	3.86	11	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
						283	1	8	5	26	44	1	18	5	7	17	9	...	12	16	17	...	...	...	5	19	10
Died per 1000 of the Average Strength.																											
For the year	13,271*	586	4.32	504	37.14	20.86	.07	2.87	3.24	.07	1.70	.52	1.92	...	.89	1.18	1.25	...	...	.07	.37	1.39	.74				

CAUSES OF ADMISSIONS.	NUMBER OF ADMISSIONS INTO HOSPITAL IN EACH MONTH.												Total Admissions during the Year.	Admitted per cent. of Average Strength.	Died per cent. of Admissions.
	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.			
Cholera ...	...	...	...	5	191	131	91	40	18	...	...	...	476	3.51	59.45
Smallpox ...	2	1	2	1	...	...	2	...	...	...	1	1	10	.07	10.00
Fever, Intermittent ...	203	154	183	259	297	432	579	420	779	1,408	791	555	6,080	44.68	...
" Remittent ...	11	2	6	8	8	17	15	10	23	6	5	7	120	.89	...
" Continued ...	25	14	32	193	261	218	265	146	167	107	27	39	1,513	11.15	...
Apoplexy ...	...	1	...	1	1	16	78	5	2	2	1	1	106	.78	41.51
Delirium Tremens ...	...	2	...	2	4	4	2	5	4	3	4	3	86	.67	2.78
Dysentery ...	12	8	16	31	29	21	64	46	65	62	21	22	397	2.93	5.79
Diarrhoea ...	35	37	47	105	157	142	209	269	157	63	43	43	1,396	10.50	...
Hepatitis ...	44	30	54	60	44	68	72	72	64	55	37	32	622	4.59	4.18
Spleen Disease ...	7	6	6	9	10	10	10	4	8	13	7	3	93	.69	...
Respiratory Diseases ...	120	112	91	82	48	62	78	58	87	60	58	104	910	6.93	1.39
Phthisis Pulmonalis ...	5	4	8	7	10	11	14	11	13	14	3	4	104	.77	16.35
Scurvy ...	2	...	...	2	1	1	3	...	...	1	2	...	12	.09	...
Rheumatism ...	80	86	82	109	98	67	70	63	79	82	64	46	926	6.93	...
Veneral Diseases ...	157	147	199	216	125	115	121	73	61	96	82	136	1,518	11.19	...
Eye Diseases ...	30	17	20	48	40	31	34	47	36	41	21	15	380	2.83	...
Abscess and Ulcer ...	83	92	80	93	64	58	113	90	79	69	77	67	964	7.10	...
Wounds and Accidents ...	92	116	158	147	102	94	102	70	75	120	91	160	1,217	9.11	...
All other Causes ...	117	138	164	214	191	194	250	211	238	186	85	109	2,093	15.45	...
	1,025	987	1,141	1,592	1,681	1,692	2,259	1,639	1,939	2,390	1,423	1,336	19,094		
Admitted per cent. of the Average Strength in each Month.															
	8.82	7.38	8.16	11.23	11.86	12.07	16.21	11.97	14.11	17.51	11.84	11.37	140.45		

* Death-rates and Admission-rates calculated on 13,570, the Average Strength of the 10 months from January to October.

EUROPEAN TROOPS, 1867.

VIII.

TABLE showing the GENERAL STATISTICS OF SICKNESS and MORTALITY in the PRINCIPAL MILITARY STATIONS of the BENGAL PRESIDENCY.

STATION.	Period of Observation.	Average Strength during the period of occupation.	DAILY SICK PER CENT. OF AVERAGE STRENGTH IN EACH MONTH.												Daily sick per cent. of Average Strength for the period of observation.	Admitted into Hospital per cent. of Average Strength.	DIED PER 1,000 OF AVERAGE STRENGTH.			
			Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.			A. Cholera.	B. All other causes.		C. All Causes.
																		1. In Hospital.	2. Out of Hospital.	
Fort William	8 Months, January to August	739	725	722	630	770	946	814	898	1010	614	700	648	525	271	17605	812	...	1083	
Dum-Dum	...	472	277	570	489	608	628	690	662	694	...	...	...	...	...	11186	848	...	848
Barrackpore	...	357	714	676	646	637	669	697	637	668	833	806	691	594	280	19431	1961	...	2241	
Berhampore	9 Months, January to September	126	650	461	386	1016	937	869	853	1056	826	...	...	...	...	15636	794	...	794
Sinhal, Darjeeling	7 Months, May to November	145	...	...	...	...	...	...	...	...	1189	302	232	...	...	6449	578	...	578
Darjeeling Depot	9 Months, March to November	876	...	...	...	...	...	...	...	...	...	...	...	...	...	8621	3446	...	3446
Hazareebaugh	...	507	581	504	598	636	600	731	658	680	501	704	716	742	110	9794	497	...	497	
Dinapore	...	887	811	775	843	712	805	731	734	688	617	...	...	...	...	13806	1544	...	1544
Benares	...	983	493	494	463	398	304	338	460	643	693	768	637	...	...	17882	1177	...	1177
Fyzabad	...	2435	447	408	640	684	682	612	639	665	611	638	576	...	...	6845	1074	...	1074
Lucknow	10 Months, January to October	574	440	428	428	494	473	471	471	507	480	375	412	...	...	11432	264	...	264
Seetapore	10 Months, January to October	298	465	418	297	369	235	353	456	533	496	530	377	...	...	13816	1045	...	1045
Futteeahur	...	681	379	390	433	478	404	456	533	496	532	583	583	...	...	13830	1381	...	1381
Carrapore	...	958	536	520	539	478	396	351	489	467	532	583	583	...	...	16294	1776	...	1776
Allahabad	...	203	104	369	347	472	521	514	711	569	582	498	421	145	1879	12366	1970	...	1970	
Nagode	10 Months, January to October	472	511	507	522	472	522	515	711	569	582	498	421	145	4025	14497	428	...	428	
Shahjahanpore	...	805	568	476	499	571	498	673	625	417	582	537	524	...	...	10194	428	...	428
Bareilly	7 Months, April to October	343	...	...	...	...	...	...	...	...	...	...	...	...	...	18194	1400	...	1400
Nynee Tal Depot	7 Months, April to October	206	1506	1918	1892	1208	986	861	1818	1445	1512	1111	...	...	...	18364	1498	...	1498
Landour Depot	10 Months, January to October	1579	822	854	777	507	452	456	654	663	663	663	663	...	...	22000	3475	...	3475
Meerut	...	351	680	618	669	538	445	398	632	659	690	806	1046	...	...	16890	4167	...	4167
Muttra	10 Months, January to October	967	606	608	678	646	673	646	667	667	667	667	667	...	...	12040	2174	...	2174
Aggra	...	668	450	681	409	411	545	457	594	594	594	594	594	...	...	16856	2849	...	2849
Morar	8 Months, March to October	149	449	614	333	533	467	336	476	604	604	940	1007	...	...	13052	485	...	485
Gwalior Citadel	...	183	441	495	260	240	348	300	452	455	609	463	377	...	...	20864	1818	...	1818
Seepore	...	657	705	568	676	703	548	523	587	663	619	581	633	...	...	16438	1870	...	1870
Nowgong	...	684	603	613	566	449	502	552	504	650	603	773	738	...	...	10234	1970	...	1970
Jaunpur	10 Months, January to October	1329	284	356	407	552	460	413	336	373	615	419	320	...	...	13221	2846	...	2846
Unballa	9 Months, April to October	806	...	...	...	...	...	...	...	...	...	...	...	...	...	7668	621	...	621
Durgahia	7 Months, May to November	327	...	...	...	...	...	...	...	...	...	...	...	...	...	10428	2141	...	2141
Russowlee Depot	10 Months, March to December	761	...	...	...	...	...	...	...	...	...	...	...	...	...	11638	608	...	608
Sabathoo	7 Months, April to October	788	...	...	...	...	...	...	...	...	...	...	...	...	...	20441	4412	...	4412
Phillour	10 Months, March to December	773	...	...	...	...	...	...	...	...	...	...	...	...	...	6523	702	...	702
Ferozepore	...	101	100	200	100	...	...	...	...	...	...	...	...	...	...	14219	1423	...	1423
Mooltan	8 Months, April to November	107	337	460	390	373	362	294	1264	1261	1376	917	874	...	...	6533	1423	...	1423
Dharmasala	...	73	...	...	...	...	...	...	...	...	...	...	...	...	...	6533	1423	...	1423
Kanara	...	138	...	...	...	...	...	...	...	...	...	...	...	...	...	6533	1423	...	1423
Gorakhpur	...	140	...	...	...	...	...	...	...	...	...	...	...	...	...	6533	1423	...	1423
Port Lahore	...	1080	...	...	...	...	...	...	...	...	...	...	...	...	...	6533	1423	...	1423
Messia Meer	...	1363	...	...	...	...	...	...	...	...	...	...	...	...	...	6533	1423	...	1423
Kawulpore	...	1406	...	...	...	...	...	...	...	...	...	...	...	...	...	6533	1423	...	1423
Campbellpore	...	1406	...	...	...	...	...	...	...	...	...	...	...	...	...	6533	1423	...	1423
Attock	...	160	...	...	...	...	...	...	...	...	...	...	...	...	...	6533	1423	...	1423
Head-quarter Detachments, Murree Hills	6 Months, May to October	644	...	...	...	...	...	...	...	...	...	...	...	...	...	1423	...	...	...
Murree Depot and Family Camp	6 Months, May to October	346	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Kowara	11 Months, February to December	1754	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Peshawar	4 Months, July to October	757	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...

* See note to Table XVI.

EUROPEAN TROOPS, 1867.

IX.

TABLE showing the ratio in which the PRINCIPAL DISEASES have contributed to make up the ADMISSION-RATE of the Year in the CHIEF MILITARY STATIONS of the BENGAL PRESIDENCY.

STATION.	Average Strength during the period of occupation.	ADMITTED INTO HOSPITAL PER CENT. OF AVERAGE STRENGTH.											Admitted per cent. of Average Strength from all Causes.
		Cholera.	Heat Apoplexy.	Fever.	Dysentery.	Diarrhoea.	Hepatitis.	Ophthalmia.	Rheumatism.	Veneral Diseases.	Diseases of the Respiratory Organs.	All other Causes.	
Fort William	739	41	27	25.44	74	14.88	6.77	2.03	10.28	33.56	9.61	68.06	176.06
Dum-Dum (8 months)	473	21	21	28.00	11.65	4.87	3.81	8.5	4.66	14.41	6.57	36.02	111.86
Barrackpore	357	28	28	38.68	6.44	17.65	12.04	1.40	4.48	16.53	3.02	82.63	184.31
Berhampore (9 months)	126	...	...	67.46	1.59	3.17	9.52	2.38	10.32	14.29	4.76	42.96	166.35
Sinochal, Darjeeling	518	...	...	7.14	1.35	5.21	4.44	1.93	4.63	6.76	4.33	28.19	64.46
Darjeeling Depot (7 months)	145	...	...	15.17	3.45	4.14	13.10	3.45	10.34	8.97	2.07	25.52	86.21
Hazareebaugh (8 months)	876	11	...	27.74	5.71	7.42	2.05	3.54	7.76	15.07	4.23	24.32	97.94
Dinapore	907	11	11	23.92	6.84	8.05	5.40	4.41	5.18	26.35	3.75	50.94	135.06
Benares	595	...	50	24.03	3.19	6.55	9.75	3.70	10.59	41.01	6.89	72.61	178.52
Fyzabad	887	34	...	18.72	2.14	2.37	4.17	3.72	4.74	16.46	3.49	24.80	80.95
Rae Bareilly (10 months)	393	...	...	7.13	2.29	1.53	6.11	2.5	3.56	23.41	4.63	19.34	66.46
Lucknow	2,535	43	24	18.62	4.73	9.15	4.34	3.07	5.17	18.11	5.17	45.29	114.33
Seetapore (10 months)	574	139	52	15.68	3.66	8.19	4.88	1.74	5.40	16.73	2.79	13.76	74.74
Futtehghur	286	...	...	41.26	2.90	11.19	6.64	5.60	8.04	17.48	8.04	38.11	139.16
Cawnpore	691	43	...	35.02	3.18	6.95	8.25	4.20	8.83	19.39	5.21	44.14	135.60
Allahabad	958	292	42	63.68	3.24	8.35	4.28	2.92	5.85	22.34	4.28	44.26	162.84
Nagode	203	...	...	39.90	3.04	2.95	8.87	4.93	18.72	4.93	7.39	32.02	123.45
Shahjehanpore (10 months)	472	5.08	21	13.35	6.5	11.86	2.33	6.14	12.29	26.81	9.66	53.39	144.07
Bareilly	805	37	50	16.40	4.72	6.71	4.60	9.94	6.21	17.51	3.23	31.05	101.24
Nynce Tal Depot (7 months)	343	...	...	27.40	4.96	6.71	22.45	1.17	19.53	29.15	5.83	36.44	153.64
Landour Depot (7 months)	205	...	...	34.14	4.88	7.90	14.15	4.9	39.02	41.71	10.73	40.98	163.90
Roorkee	360	...	28	98.34	3.33	5.83	6.11	8.3	36.11	12.78	10.93	45.56	230.00
Moradabad (10 months)	299	234	...	9.70	2.01	7.69	8.03	3.68	7.69	20.07	10.70	46.49	120.40
Meerut	1,579	7.79	32	32.63	4.62	15.71	3.93	6.40	8.30	7.48	8.04	45.90	151.11
Delhi	351	29	...	72.08	6.55	13.68	5.41	1.42	11.11	16.52	7.41	32.48	166.95
Muttra (10 months)	412	24	...	6.79	1.21	4.9	1.46	9.7	2.43	18.69	4.13	23.54	59.95
Agra	967	...	21	36.71	3.10	6.00	5.69	5.27	3.93	31.75	5.69	32.27	130.82
Morar	668	1.73	6.45	86.98	2.42	15.09	3.23	5.30	5.88	15.78	10.02	55.76	206.94
Gwalior Citadel	219	3.65	1.83	65.29	5.02	11.87	5.02	4.11	5.84	17.35	9.13	35.16	168.38
Seepree (8 months)	149	...	...	77.18	3.36	2.01	4.03	1.34	1.34	11.41	6.04	28.86	135.67
Jhansi	608	...	16	130.10	3.94	9.54	5.10	1.81	7.40	15.30	7.57	41.61	222.53
Nowgong	193	...	...	37.82	2.07	3.11	6.22	1.56	7.25	14.51	5.70	32.12	110.36
Saugor	657	...	...	105.18	2.43	11.72	7.15	1.08	5.46	19.03	9.89	49.01	211.87
Jubbulpore	634	...	...	99.98	4.26	5.68	5.21	2.53	12.78	16.56	3.79	51.10	201.58
Umballa (10 months)	1,329	2.18	15	42.89	1.50	11.96	3.69	3.24	7.15	11.14	5.73	33.46	133.10
Dughale (9 months)	805	...	...	30.56	1.12	11.06	1.74	8.7	3.10	4.72	2.98	19.50	75.65
Kussowlie Depot (7 months)	327	32	61	25.08	3.36	12.53	5.50	6.1	22.63	9.48	3.67	20.49	104.28
Subathoo (10 months)	751	5.33	...	23.93	1.00	23.90	9.85	2.13	9.19	8.12	7.46	25.97	116.38
Phillour	68	...	...	113.24	2.94	7.35	4.41	1.47	22.06	14.70	5.88	32.36	204.42
Jullundur (7 months)	788	1.52	...	18.91	1.02	3.81	2.79	2.60	3.43	5.58	2.41	23.10	65.23
Ferozepore (10 months)	773	2.07	2.07	53.56	3.36	8.93	1.55	3.75	4.66	9.58	6.15	44.50	142.18
Mooltan	763	...	39	17.69	2.40	6.16	3.67	1.97	4.59	12.45	5.90	29.31	83.62
Dera Ismael Khan	101	...	99	14.85	3.96	1.98	...	...	4.95	9.9	3.96	33.67	69.35
Sealkote	1,262	...	32	37.08	1.74	7.69	3.49	5.39	6.26	15.21	13.95	39.23	130.35
Dhurmalla (8 months)	107	93	...	20.56	1.87	14.02	15.89	...	9.34	17.76	5.61	26.17	113.15
Kangra	73	...	...	19.18	...	2.74	16.44	5.47	10.86	10.96	4.11	47.95	117.61
Govindghur	138	72	...	49.28	1.45	3.63	2.90	5.90	9.42	19.57	8.69	35.51	136.96
Fort Lahore	140	2.86	...	186.42	2.14	20.00	11.43	6.43	5.00	16.57	7.96	44.29	305.00
Meean Meer	1,030	8.35	4.76	128.93	2.52	11.36	3.50	5.63	5.63	13.01	6.90	38.74	239.03
Rawul Pindoe	1,362	...	30	35.60	1.70	4.29	4.07	2.59	6.58	15.46	6.73	44.01	181.23
Campbellpore	406	...	98	19.46	2.4	2.96	7.4	3.45	10.84	5.42	4.93	59.36	108.38
Attock	160	...	1.88	63.75	1.25	13.75	8.12	1.25	14.37	9.33	1.98	41.35	156.89
Road-making Detachments, Murree Hills (6 months)	644	...	...	3.57	31	31	4.7	31	62	3.26	1.09	4.19	14.13
Murree Depot and Family Camps	346	2.02	39	17.34	3.18	7.52	7.23	2.02	8.38	6.07	1.73	21.39	77.17
Nowshera (11 months)	730	98	96	95.90	96	4.93	4.93	9.97	3.94	2.74	25.63	145.21	307.18
Peshawar*	1,754	15.62	87	108.78	8.78	19.10	6.33	1.31	4.85	7.24	7.01	27.59	207.18
Cheerat (4 months)†	757	13	13	11.80	10.44	13.47	2.25	...	2.25	52	66	8.19	49.54

* Including the Admissions at Cheerat.

† Troops withdrawn from the Peshawar Valley on account of the prevalence of Cholera.

EUROPEAN TROOPS, 1867.

X.

TABLE showing the PREVALENCE of SMALLPOX in each MONTH, and the DISTRIBUTION of the DISEASE by STATIONS and PROVINCES.

STATIONS.	Average Strength during the period of occupation.	NUMBER OF ADMISSIONS INTO HOSPITAL IN EACH MONTH.												Total Admissions of the year.	Admitted per cent. of the Average Strength.	Number of Deaths.	Died per 1,000 of the Average Strength.
		Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.				
Chinsurah Depôt Recruits, Invalids, and Time-expired men on march	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Fort William	739	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Dum-Dum	472	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Barrackpore	357	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Berhampore	126	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	1,000	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Sinchal, Darjeeling	519	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Darjeeling Depôt	145	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Parasnath Depôt	23	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Hazareebaugh	876	...	...	1	...	...	...	...	...	...	...	...	...	1	...	...	...
Dinapore	907	...	...	...	2	...	...	...	...	...	...	...	...	2	...	2	...
Bonares	595	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Fyzabad	887	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Rae Bareilly	393	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Lucknow	2,535	1	...	...	...	1	...	...	...	...	...	...	...	2	...	...	...
Seetapore	874	...	...	...	...	...	1	...	...	...	...	...	...	1	...	...	...
Futteghur	296	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Cawnpore	691	1	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...
Allahabad	959	...	...	1	...	...	...	...	...	...	...	...	...	1	...	...	...
Nagode	203	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	9,580	2	...	2	2	1	1	...	...	...	...	...	...	8	08	3	31
Shahjehanpore	472	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Bareilly	805	...	...	3	2	...	...	...	...	...	...	...	...	5	...	...	...
Nynee Tal Depôt	343	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Landour Depôt	205	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Roorkie	360	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Moradabad	299	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Meerut	1,579	1	...	...	...	3	1	...	...	...	...	...	...	5	...	...	...
Dohli	351	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Muttra	412	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	4,747	1	...	3	2	3	2	...	...	...	...	...	...	11	23	...	...
Agra	967	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Morar	883	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Gwalior Citadel	219	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Seepree	148	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Jhansi	608	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Nowgong	193	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Baugor	657	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Jubbulpore	634	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	4,248	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Umballa	1,329	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Dugahale	805	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Kussowlie Depôt	327	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Subathoo	751	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Phillour	69	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Jullundur	783	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Ferozepore	773	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Mooltan	763	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Dera Ismael Khan	101	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Sealkote	1,262	...	...	...	1	...	...	1	...	...	...	...	...	4	...	1	...
Dhurmsalla	107	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Kangra	73	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Govindghur	138	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Fort Lahore	140	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Meean Meer	1,030	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Rawul Pindee	1,352	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Campbellpore	408	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Attock	160	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Boad-making Detachments, Murree Hills	644	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Murree Depôt and Family Camps near Murree	345	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Nowshera	730	...	1	...	...	...	...	...	...	...	...	...	...	1	...	...	...
Peshawur	1,754	2	...	2	...	...	...	1	...	...	...	...	...	5	...	...	...
Cheerat	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Troops on the march, Punjab	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	13,570	2	1	2	1	...	...	2	...	...	...	1	1	10	07	1	07
Troops on the march, Bengal and N. W. Provinces	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Bengal Presidency	34,603	5	1	7	5	4	3	2	...	...	...	1	1	29	08	4	19

EUROPEAN TROOPS, 1867.

XI.

TABLE showing the PREVALENCE of CHOLERA in each MONTH, and the DISTRIBUTION of the DISEASE by STATIONS and PROVINCES.

STATIONS.	Average Strength during the period of occupation.	NUMBER OF ADMISSIONS INTO HOSPITAL IN EACH MONTH.												Total Admissions of the Year.	Admitted per cent. of the Average Strength.	Number of Deaths.	Died per 1,000 of the Average Strength.
		Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.				
Chinsurah Depot	...	2	...	...	...	...	...	...	...	1	...	...	1	4	...	2	...
Recruits, Invalids, and Time-expired men on march	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Fort William	739	...	...	...	...	1	...	...	1	...	...	1	...	3	...	2	...
Dum-Dum	472	...	...	...	...	...	...	...	...	...	...	1	...	1	...	1	...
Barrackpore	367	...	...	...	...	...	...	...	...	...	...	1	...	1	...	1	...
Berhampore	126	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	1,900	...	...	...	...	1	...	...	1	...	...	3	...	5	31	4	2.60
Sinhal, Darjeeling	518	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Darjeeling Depot	145	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Parasnath Depot	22	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Hazareebaugh	876	...	...	...	...	...	...	...	...	...	...	1	...	1	...	1	...
Dinapore	907	...	...	...	...	1	...	...	...	...	...	...	...	1	...	1	...
Benares	585	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Fyzabad	887	...	...	...	2	1	...	...	...	...	...	...	...	3	...	2	...
Rae Bareilly	393	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Lucknow	2,635	...	...	...	...	...	...	1	7	...	...	...	...	11	...	6	...
Sectapore	574	...	...	...	...	...	...	...	4	4	...	...	...	8	...	6	...
Futtehghur	266	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Cawnpore	691	...	...	...	...	1	...	2	...	...	...	...	...	3	...	2	...
Allahabad	958	...	...	...	...	...	...	2	26	...	...	...	...	28	...	15	...
Nagode	203	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	9,580	...	...	...	2	3	...	5	37	7	...	1	...	55	58	36	3.76
Shahjehanpore	472	...	...	...	...	...	...	...	23	1	...	...	...	24	...	19	...
Bareilly	805	...	...	...	...	1	...	1	1	...	...	...	...	3	...	2	...
Nynee Tal Depot	343	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Landour Depot	205	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Roorkee	380	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Moradabad	299	...	...	...	...	...	...	4	3	...	...	...	...	7	...	5	...
Meerut	1,579	...	...	...	...	...	...	...	16	106	...	...	...	123	...	112	...
Delhi	351	...	...	...	1	...	...	...	...	...	...	...	...	1	...	1	...
Muttra	412	...	...	...	...	1	...	...	...	...	...	...	...	1	...	1	...
	4,747	...	...	...	1	2	...	5	43	107	...	...	...	159	3.33	140	29.49
Agra	907	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Morar	868	...	...	...	...	...	1	4	8	2	...	...	...	15	...	10	...
Gwalior Citadel	219	...	...	...	...	...	...	1	5	2	...	...	...	8	...	4	...
Seepree	149	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Jhansi	603	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Nowgong	183	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Saugor	657	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Jubbulpore	634	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	4,246	...	...	...	...	...	1	5	13	4	...	...	...	23	54	14	3.30
Umballa	1,339	...	...	...	4	23	1	...	...	2	...	...	...	29	...	23	...
Dugshale	805	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Kussowlie Depot	337	...	...	...	...	...	...	1	...	...	...	...	...	1	...	1	...
Subathoo	751	...	...	...	1	...	8	3	26	2	...	...	...	40	...	19	...
Phillour	68	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Jullundur	788	...	...	...	...	...	...	...	...	12	...	...	...	12	...	9	...
Ferozepore	773	...	...	...	...	...	3	12	1	...	...	...	...	16	...	8	...
Mooltan	763	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Dera Ismail Khan	101	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Sealkote	1,262	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...
Dhurmshalla	107	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Kangra	73	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Govindghur	138	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Fort Lahore	140	...	...	...	...	...	...	2	1	1	...	...	...	4	...	3	...
Meeran Meer	1,030	...	...	...	...	6	8	62	10	...	...	...	...	86	...	52	...
Rawal Pindie	1,353	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Campbellpore	406	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Attock	180	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Road-making Detachments,	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Murree Hills	644	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Murree Depot and Family	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Camp	346	...	...	...	...	...	...	5	5	2	...	...	...	7	...	3	...
Nowshera	730	...	...	...	...	...	...	...	...	...	...	...	...	5	...	3	...
Peshawar	...	...	...	...	...	...	...	...	...	...	...	...	...	273	...	163	...
Cheerat	1,754	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...
Troops on the march, Punjab	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	13,570	...	...	...	5	191	131	91	40	18	...	...	...	476	3.51	293	20.86
Troops on the march, Bengal and N. W. Provinces	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Bengal Presidency	34,603	2	...	...	8	197	132	106	134	137	1	4	1	722	2.09	479	13.84

EUROPEAN TROOPS, 1867.

XIII.

TABLE showing in detail the CAUSES of DEATH and INVALIDING.

TOTAL LOSS OF THE ARMY OF THE BENGAL PRESIDENCY BY DEATH AND INVALIDING, 2707. PER 1,000 OF AVERAGE STRENGTH 78.23.						
LOSS OF THE ARMY BY DEATH 1,071.				LOSS OF THE ARMY BY INVALIDING 1,636.		
CAUSES OF DEATH.	Died in Hospital.	Died out of Hospital.	Died per 1000 of Strength.	CAUSES OF INVALIDING.	Invalided for Discharge from the Service.	Invalided for Change of Climate. Invalided per 1000 of Strength.
Cholera	479	...	13.84	Febris Intermittens	9	89
Variola	4	...	1.12	" Remittens et Continua	3	8
Pyæmia	1	...	...	Ophthalmia	7	8
Erysipelas	1	...	...	Dysentery	5	57
Febris Intermittens	25	...	2.03	Diarrhoea	2	23
" Remittens	25	...	...	Rheumatismus	42	54
" Continua	41	...	...	Syphilis Secunda	23	65
Dysentery Acuta	49	...	1.97	Iritis Syphilitica	1	...
" Chronica	19	...	...	Stricture Urethra	4	7
Diarrhoea	14	...	4.0	Scorbutus	...	1
Rheumatismus	2	...	...	Ebrietas	1	...
Syphilis Secunda	3	...	...	Anæmia	8	43
Hydrophobia	1	...	...	Carcinoma	...	1
Purpura	1	...	...	Lupus	...	1
Ebrietas	4	1	...	Serofula	7	9
Anæmia	3	...	...	Phthisis Pulmonalis	45	66
Anasarca	2	...	...	Hæmoptysis	...	6
Scirrhus	4	...	...	Abcessus Psoanus	1	...
Tumor (nature not specified)	1	...	...	Incolatio	2	15
Phthisis Pulmonalis	46	...	1.36	Encephalitis	...	1
Hæmoptysis	1	...	...	Epilepsia	18	7
Morbus Cere	1	...	...	Chorea	...	1
Tuberculosis Mesenterica	1	...	...	Paralysis	12	11
Meningitis	1	...	...	Mania	3	2
Encephalitis	6	...	...	Dementia	11	1
Epilepsia	3	...	...	Otitis	2	2
Apoplexia	83	2	2.46	Dysæcia	4	4
Paralysis	4	...	...	Cæcitas	3	4
Delirium Tremens	14	...	4.0	Neuralgia	1	3
Pericarditis	1	...	...	Cephalæa	5	19
Morbus Cordis	16	...	1.16	Pericarditis	...	1
Aneurisma	23	...	...	Morbus Cordis	61	56
Bronchitis	10	...	...	Aneurisma	2	2
Pleuritis	3	...	...	Angina Pectoris	...	1
Empyema	1	...	8.7	Palpitation	...	5
Pneumonia	15	...	...	Phlebitis	1	1
Asthma	1	...	...	Epistaxis	...	1
Pharyngitis	1	...	...	Varix	11	3
Gastritis	3	...	...	Syncope	1	...
Enteritis	2	...	...	Tonsillitis	...	1
Ileus	2	...	...	Laryngitis	...	1
Hæmatemesis	1	...	...	Bronchitis	4	19
Peritonitis	4	...	...	Pleuritis	...	2
Hernia	1	...	...	Pneumonia	...	3
Fistula in Ano	1	...	...	Asthma	1	...
Hepatitis Acuta	49	...	2.57	Hernia	19	2
" Chronica	40	...	...	Dyspepsia	5	10
Icterus	1	...	...	Hæmorrhoids	1	...
Cirrhosis	2	...	...	Fistula in Ano	...	4
Ascites	3	...	...	Ileus	...	1
Nephritis	3	...	...	Gastritis	...	1
Extravasation of Urine	1	...	...	Hæmatemesis	...	1
Disease of Suprarenal Capsules	1	...	...	Splenitis	1	9
Atrophy and Debility	3	...	1.7	Hepatitis	38	178
Amputation (cause not specified)	1	...	...	Nephritis	1	2
Accident	8	4	...	Cystitis	1	...
Snake-bite	1	8	...	Enuresis	1	...
Suicide	...	11	1.19	Diabetes	...	1
Drowning	...	13	...	Lithiasis	...	1
Asphyxia	...	2	...	Varicocele	1	2
Suffocated while drunk	...	1	...	Orchitis	1	3
				Synovitis	4	1
				Arthritis	1	...
				Periostitis	2	2
				Caries	1	2
				Necrosis	1	...
				Contractura	9	...
				Abcess	1	...
				Ulcer	4	5
				Eczema	1	1
				Psoriasis	...	1
				Debility (worn out)	132	...
				Fracture	7	1
				Dislocation	2	...
				Contusion	1	4
				Incised wound	...	1
				Lacerated wound	1	...
				Gunshot wound	3	1
				Amputation	3	...
				Cause not specified	5	6
Ratio per 1,000 for Deaths from causes not specially calculated above	...	...	1.81	Ratio per 1,000 for Invaliding from causes not specially calculated above	...	6.45
	1,087	34	30.95		546	1,000 47.26

EUROPEAN TROOPS, 1867.

XIV.

STATEMENT showing the GAIN and LOSS of the REGIMENTS of the ARMY of BENGAL in STRENGTH during the YEAR.

	Sappers and Miners.	Artillery.	Cavalry.	Infantry.	Army of Bengal.
<i>Strength at the beginning of the Year.</i>					
At Head Quarters and on Detachment on 1st January 1867 ...	82	5,732	3,079	26,184	35,077
Recruits from England in India on march to join ...	...	163	...	182	345
On Staff employment ...	73	17	13	48	151
In Military and other Prisons ...	...	26	4	116	146
Elsewhere, Sick in other Hospitals, and men remaining at Convalescent Depôts ...	...	138	70	925	1,133
Total Strength in India on 1st January 1867 ...	155	6,076	3,166	27,455	36,852
<i>Additions during the Year.</i>					
Transfers received from other Regiments ...	...	654	22	242	918
Transferred from Regiments leaving India, by { from Bengal Presidency ...	...	41	44	469	554
volunteering ... { from other Presidencies ...	...	3	...	12	15
Recruited in India ... { New Soldiers ...	...	3	8	52	63
Received from England, landed after 1st January—Recruits ... { Time-expired men ...	...	1	2	1	4
Deserters rejoined " " " " " Invalids returned ...	10	39	10	216	275
Deserters rejoined " " " " " Invalids returned ...	...	...	13	7	20
Deserters rejoined " " " " " Invalids returned ...	...	2	1	7	10
Total Additions of the year ...	10	743	100	1,006	1,859
<i>Loss during the Year.</i>					
Transfers given to other Regiments ...	9	847	136	1,673	2,665
Time-expired men who have left the Service ...	3	131	222	1,091	1,447
Men who have purchased their discharge ...	2	14	24	97	137
Men discharged otherwise ...	...	...	...	13	13
Invalided, as in annexed Return { for Discharge ...	1	77	43	425	546
Dismissed by sentence of Court-martial ... { for Change of Climate ...	2	249	67	771	1,089
Deserted ...	...	5	1	9	15
Died at Head Quarters and on Detachment ...	...	4	4	34	42
Died absent from the Regiment ... { at Convalescent Depôts ...	8	169	39	780	996
Died absent from the Regiment ... { in other Hospitals ...	...	7	4	27	38
Died absent from the Regiment ...	1	14	3	19	37
Total Loss of the year ...	26	1,517	543	4,939	7,025
Strength remaining, including all men borne on the Rolls who are in India ...	139	5,302	2,723	23,522	31,686

ABSTRACT.

Remained on 1st January 1867 ...	...	36,852
Added during 1867 ...	...	1,859
Total	...	38,711
Deduct Loss during 1867 ...	...	7,025
Remain at date of Return ...	...	31,686

This Return has reference to those Regiments only which have served throughout the year in the Bengal Presidency; hence, the transfers and volunteering to the Regiments and Batteries which arrived in India towards the close of the year, shown in the Loss, remain uncredited in the above Statement.

EUROPEAN TROOPS, 1867.

XV.

DISTRIBUTION of the EUROPEAN ARMY of the BENGAL PRESIDENCY on 28th June 1867.

STRENGTH OF THE ARMY ON 28th JUNE 1867, 84,663.

STRENGTH OF THE ARMY ON 20th JUNE 1887, 84,065.									
ARTILLERY.			STATION.	STRENGTH.	INFANTRY.			STATION.	STRENGTH.
A. Horse Brigade A. Battery			Meerut	136	3rd Regiment, 1st Battalion			Meerut	700
B. "			Meean Meer	138	5th " 1st "			Ferozepore	688
C. "			Lucknow	125	7th " 1st "			Saugor	478
D. "			Meerut	120	11th " 1st "			Nowgong	200
E. "			Umballa	134	12th " 2nd "			Fyzabad	970
C. Horse Brigade F. "			Benares	120	19th " 1st "			Seetapore	487
F. Horse Brigade A. "			Umballa	124	23rd " 1st "			Rae Bareilly	300
B. "			Sealkote	118	27th " "			Nowshera	723
C. "			Morar	116				Jubbulpore	403
D. "			Rawul Pindee	123				Nagode	214
E. "			Peshawur	123				Dum-Dum	445
F. "			Peshawur	111				Barrackpore	107
8th Brigade B. Battery			Lucknow	144				Berhampore	128
C. "			Fyzabad	146	35th "			Mooltan	507
D. "			Seetapore	146				Dera Ismail Khan	101
11th Brigade D. Battery			Agra	123	36th "			Moradabad	206
E. "			Morar	119	37th "			Shahjehanpore	465
F. "			Bareilly	123	38th "			Bareilly	681
G. "			Cawnpore	118				Sealkote	779
16th Brigade A. Battery			Hazareebaugh	115				Govindghur	73
B. "			Meerut	118	41st "			Fort Lahore	110
C. "			Barrackpore	146	42nd "			Agra	797
D. "			Barrackpore	127	46th "			Peshawur	803
E. "			Saugor	131	55th "			Lucknow	803
F. "			Dinapore	134	58th "			Lucknow	803
G. "			Jubbulpore	116	77th "			Darjeeling	479
19th Brigade A. Battery			Ferozepore	140	79th "			Benares	315
B. "			Rawul Pindee	124	82nd "			Peshawur	601
C. "			Meerut	125				Attock	108
D. "			Mooltan	134				Roorkee	300
E. "			Peshawur	114				Delhi	200
F. "			Meean Meer	124	88th "			Jullundur	653
G. "			Jullundur	139	90th "			Phillour	73
22nd Brigade A. Battery			Allahabad	127	91st "			Kangra	67
B. "			Jhansi	105	93rd "			Rawul Pindee	480
3. "			Lucknow	67	94th "			Murree Hills	302
4. "			Peshawur	56	101st "			Subathoo	798
5. "			Morar	63	103rd "			Hazareebaugh	461
6. "			Fort Lahore	54	104th "			Jhansi	490
7. "			Agra	55	106th "			Seepree	142
24th Brigade 1. Battery			Mooltan	59	107th "			Umballa	648
2. "			Meean Meer	63	2nd Battalion Rifle Brigade			Cawnpore	430
3. "			Meerut	63	3rd " "			Futteghur	297
4. "			Allahabad	65				Morar	514
5. "			Morar	51				Fortress Gwalior	230
6. "			Govindghur	63				Dughala	603
26th Brigade 1. Battery			Saugor	58				Dinapore	764
2. "			Delhi	63				Meean Meer	790
3. "			Fort William	63				Allahabad	776
4. "			Attock	57				Fort William	608
5. "			Darjeeling	66				Rawul Pindee	600
Sappers and Miners			Roorkee	44				Murree Hills	250
CAVALRY.					CONVALESCENT DEPOTS.				
2nd Dragon Guards			Muttra	402				Darjeeling	142
5th Lancers			Lucknow	440				Parianath	33
7th Dragon Guards			Benares	207				Nynae Tal	347
			Cawnpore	130				Landour	206
7th Hussars			Sealkote	405				Kussowlie	346
19th Hussars			Meerut	379				Dhurmaalla	110
20th Hussars			Campbellpore	300				Nundoots and other	50
			Sydn Boles	109				Family Camps	281
21st Hussars			Umballa	363				Murree	281
					PRESIDENCY DEPOT.				
								Chinsurah	31

ABSTRACT of the RETURNS showing the ADMISSIONS,

1.—REGIMENTS & BENGAL PROPER.

REGIMENTS & BATTERIES, & STATION or 1867.		Year of arrival in the Bengal Presidency.	Date of Arrival from Station previously occupied.	Average Strength during 1867.	Admission-rates of 1867, per cent. of Average Strength.	Loss per 1000.	
						By Death.	By Invaliding.
1	2nd Battalion Rifle Brigade, Fort William (10 months)	1867 a	December 1866, from Meerut ...	695	120	7.19	43.92
2	XXV Brigade, 3 Battery, R. Art., Fort William ...	...	.....	97	225	14.93	208.00
3	27th Regiment, Dum-Dum (9 months) ...	1864 a	January 1867, from Hazareebaugh ...	689	139	10.16	160.96
4	XVI Brig., C. Battery, R. Art., Barrackpore ...	...	December 1864, from Hazareebaugh ...	148	188	24.35	95.39
5	XVI Brig., D. Battery, R. Art., Barrackpore ...	...	December 1864, from Dinapore ...	128	192	31.25	154.06
6	91st Regiment, Hazareebaugh ...	1863 b	February 1867, from Dum-Dum ...	805	109	11.18	59.39
7	XVI Brig., A. Battery, R. Art., Hazareebaugh ...	...	February 1867, from Jubbulpore ...	112	242	...	160.71
8	106th Regiment, Dinapore ...	1866 b	February 1866, from Madras Presidency ...	913	126	18.45	56.53
9	XVI Brig., F. Battery, R. Art., Dinapore ...	...	December 1864, from Barrackpore ...	133	153	22.56	30.08
10	7th Dragoon Guards, Benares ...	1869 a	February 1865, from Muttra ...	287	102	19.73	22.96
11	66th Regiment, Left Wing, Benares ...	1864 a	November 1864, from England ...	311	197	10.08	45.02
12	C Brig., F. Battery, R. H. Art., Benares ...	...	December 1865, from Lucknow ...	131	197	7.03	46.50
13	1-11th Regiment, Fyzabad ...	1864 a	October 1864, from England ...	804	77	11.20	36.07
14	VIII Brig., C. Battery, R. Art., Fyzabad ...	1866 a	November 1866, from England ...	145	129	27.50	27.50
15	2-12th Regiment, Wing, Rae Bareilly ...	1864 a	October 1864, from England ...	395	74	15.19	73.48
16	5th Lancers, Lucknow ...	1864 a	January 1864, from England ...	499	93	15.28	15.28
17	46th Regiment, Lucknow ...	1869 c {	March 1865, from Shahjehanpore and Moradabad ... }	864	114	11.57	40.77
18	55th Regiment, Lucknow ...	1864 a	February 1866, from Dum-Dum ...	674	124	17.16	87.70
19	A. Brig., C. Battery, R. H. Art., Lucknow ...	1866 a	February 1866, from England ...	136	150	14.49	56.90
20	VIII Brig., B. Battery, R. Art., Lucknow ...	1866 a	December 1866, from England ...	146	163	41.56	46.05
21	XXII Brig., 3 Battery, R. Art., Lucknow ...	...	January 1866, from Morar ...	70	117	14.29	42.87
22	2-12th Regiment, H.A. Qrs., Secotapore ...	1864 a	October 1864, from England ...	499	79	25.25	94.93

a. From England.

b. From Madras Presidency.

c. From Bombay Presidency.

VI

BEHAR, REMARKS, OUDE, and CANNPORE.

[illegible]

TABLE

REGIMENTS OF BENGAL PROPER, BEHAR, BEHAR, OUDH, AND CAWNPORE									
REGIMENTS & BATTERIES, & STATION OF 1867.			Year of arrival in the Bengal Presidency.	Date of Arrival from Station previously occupied.	Average Strength during 1867.	Admission-rate of 1867, per cent. of Average Strength.	Loss per 1000.		
							By Death. By Invaliding.		
23	VIII Brig., D. Battery, R. Art., Secapore ...	...	1866 a	December 1866, from England ...	...	146	137	34'25	54'80
24	7th Dragoon-Guards, Detachment, Cawnpore	...	.....	.....	.....	135	113	8'00	.....
25	101st Regiment, Cawnpore and Futteghur	...	•	November 1866, from Dugahale	...	613	137	23'37	65'19
26	XI Brig., G. Battery, R. Art., Cawnpore ...	...	.....	December 1863, from Meerut ...	...	129	85	51'01	.....
27	107th Regiment, Allahabad ...	...	•	November 1864, from Lucknow	...	814	171	47'21	53'17
28	XXII Brigade, A. Battery, R. Art., Allahabad	...	.....	December 1866, from Meerut ...	...	123	98	16'26	46'75
29	XXIV Brigade, 4th Battery, R. Art., Allahabad	...	.....	March 1865, from Attock ...	...	61	130	16'40	32'50
						10,857	125	13'06	50'00

2.—REGIMENTS of ROHILCUND, MEERUT,

1 36th Regiment, Head Quarters, Shahjehanpore ...	1864 a	March 1865, from Lucknow ...	533	167	49'34	66'01
2 36th Regiment, Left Wing, Moradabad ...			296	125		
3 37th Regiment, Bareilly ...	1866 a	December 1866, from England...	683	100	15'18	29'28
4 XI Brigade, F. Battery, R. Art., Bareilly ...	.....	February 1865, from Delhi ...	127	106	31'60	.....
5 79th Regiment, Head Quarters, Roorkee ...	1867 a	December 1866, from Rawalpindie	351	235	45'33	143'50
6 Bengal Sappers and Miners, Roorkee ...	.....	Head Quarters stationary ...	41	220	97'54	48'75
7 19th Hussars, Meerut ...	•	December 1863, from Lucknow	430	151	11'03	55'81
8 1-3rd Regiment, Meerut ...	1867 a	January 1867, from England ...	679	150	185'35	20'02
9 A. Brigade, A. Battery, R. H. Art., Meerut	1866 a	March 1866, from England ...	147	155	54'43	81'22
10 A. Brigade, D. Battery, R. H. Art., Meerut	1866 a	March 1865, from England ...	139	120	7'25	36'28
11 XVI Brigade, B. Battery, R. Art., Meerut ...	.....	February 1867, from Sangor ...	126	100	23'01	7'94
12 XIX Brigade, C. Battery, R. Art., Meerut ...	.....	December 1866, from Agra ...	134	111	16'04	14'83
13 XXIV Brigade, 3 Battery, R. Art., Meerut ...	...	April 1866, from Peshawar ...	65	105	.....	16'39
14 79th Regiment, Left Wing, Delhi ...	1867 a	December 1866, from Rawalpindie	360	105	33'35	50'16
15 XXV Brigade, 3 Battery, R. Art., Delhi ...	•	January 1865, from Sangor ...	69	140	11'04	79'37

a. From England.

• Reorganized from Local Regiments.

BENARES, OUDE, and CAWNPORE.—Continued.

		CAUSES OF ADMISSIONS INTO HOSPITAL, OF DEATHS IN AND OUT OF HOSPITAL, AND OF THE INVALIDING OF 1897.																													
Total Admissions, and Loss of the Year by Death and Invaliding.		Cholera	Smallpox.	Intermittent Fevers.	Remittent and Continued Fevers.	Dysentery.	Diarrhoea.	Erysipelas.	Ophthalmia.	Rheumatism and Rheumatic Affections.	Primary Venereal Affections.	Secondary Venereal Affections.	Scurvy.	Anæmia and Debility.	Phthisis Pulmonalis and Hemoptysis.	Apoplexy, Epilepsy, and Brain Affections.	Neuralgic Affections.	Drunkenness.	Delirium Tremens.	Heart Disease and Anæmia.	Tonsillitis, Bronchitis, and Asthma.	Pleurisy and Pneumonia.	Spleen Diseases.	Hepatitis.	Functional derangements of the Digestive System.	Diseases of the Urinary System.	Diseases of the Genurative System.	Abscess and Ulcer.	Injuries and Accidents.	Punished.	All other causes.
23	{ Admissions 200	4	...	21	30	10	38	1	8	11	14	4	...	8	...	2	4	1	...	1	3	2	...	10	5	1	5	6	9	...	4
24	{ Admissions 141	...	...	17	2	5	9	...	18	7	23	3	...	2	...	1	8	3	...	...	4	...	...	5	6	1	...	10	13	...	4
25	{ Admissions 1,115	3	1	295	27	23	63	...	31	74	103	44	3	34	10	7	39	12	1	7	27	24	4	59	47	12	10	40	59	...	57
26	{ Admissions 109	1	...	23	1	5	9	...	4	3	7	1	...	2	...	2	...	1	1	...	5	1	3	12	3	1	2	9	11	...	2
27	{ Admissions 1,388	25	1	204	297	32	78	4	24	38	164	18	1	20	10	9	13	16	1	6	34	6	4	32	59	8	6	82	89	1	14
28	{ Admissions 120	3	...	4	6	1	6	...	3	8	11	...	...	...	1	3	6	8	2	...	2	1	...	3	3	...	...	17	30	...	2
29	{ Admissions 79	...	...	15	5	...	3	...	...	5	18	1	...	...	...	...	1	1	1	...	2	...	...	4	2	1	2	14	4	...	...
	{ Admissions 13,558	65	7	1,036	1,062	503	570	13	322	671	1,983	316	9	239	97	91	264	333	44	127	479	82	47	625	712	84	176	1,090	1,003	6	393

AGRA, and CENTRAL INDIA.

1	{	Admissions	874	26	...	6	70	12	71	3	29	69	172	22	...	7	8	1	14	7	...	6	61	10	...	14	74	3	16	80	96	...	37
2	{	Admissions	308	7	1	5	25	6	23	...	11	22	55	3	...	10	4	4	9	2	2	12	30	14	1	23	30	3	6	29	29	...	14
3	{	Admissions	683	2	4	96	22	37	44	...	76	36	93	17	...	5	6	4	21	6	1	4	20	1	...	39	21	2	9	73	24	...	20
4	{	Admissions	134	2	...	15	4	3	9	...	5	12	13	3	...	7	...	4	2	3	...	4	5	1	...	5	7	...	...	15	11	...	5
5	{	Admissions	824†	...	...	331	29	18	16	...	2	158	23	14	2	11	19	2	22	8	2	5	30	7	7	21	19	4	38	14	12	...	10
6	{	Admissions	90	...	...	21	5	2	8	...	1	6	5	1	...	3	2	...	2	2	3	...	5	2	...	3	11	...	1	3	3	...	1
7	{	Admissions	648	1	...	86	27	12	22	...	19	32	45	35	...	3	2	...	6	21	...	9	18	3	10	31	77	7	3	66	91	...	23
8	{	Admissions	1,059	119	3	193	82	43	163	1	76	54	77	6	...	6	7	10	...	1	2	63	9	...	17	22	2	8	59	32	...	6	
9	{	Admissions	229	3	...	13	17	7	20	...	3	20	17	5	1	4	1	1	5	1	1	5	10	...	...	5	34	...	4	27	15	...	10
10	{	Admissions	166	...	1	4	22	3	17	...	...	6	21	3	1	2	1	...	3	...	1	...	15	2	...	10	25	...	1	9	18	...	2
11	{	Admissions	189	1	...	52	12	6	22	...	3	5	26	2	3	5	1	1	3	...	...	...	9	2	3	2	12	...	1	7	6	...	3
12	{	Admissions	149	1	1	9	5	4	12	...	2	9	26	3	1	3	3	...	4	...	...	...	7	1	...	4	20	...	...	11	19	...	4
13	{	Admissions	67	...	...	18	4	1	2	1	...	3	10	1	...	...	...	2	...	4	3	...	...	...	1	1	5	...	...	4	6	1	...
14	{	Admissions	583†	1	...	249	...	30	40	...	5	73	38	14	4	6	4	4	3	5	2	3	16	5	3	16	11	1	17	15	13	...	12
15	{	Admissions	93	...	...	27	...	1	11	...	...	...	2	2	...	...	...	1	6	1	1	...	8	...	1	10	4	...	1	10	7	...	...

were severely affected for months after the termination of the march, and the mortality and invaliding is, consequently, entered against the stations occupied by the ... are also noted as sequelæ of this fever of December 1896, which attacked the Regiment suddenly, while in

TABLE

REGIMENTS of ROHILCUND, MEERUT,									
REGIMENTS & BATTERIES, & STATION of 1867.				Year of arrival in the Bengal Presidency.	Date of Arrival from Station previously occupied.	Average Strength during 1867.	Losses from 1868.		
							By Death.	By Invalidity.	
16	2nd Dragoon Guards, Muttra (11 months) ...	...	...	1857 a	January 1865, from Benares ...	438	25	2,720	4,110
17	41st Regiment, Agra ...	...	...	1865 a	December 1865, from England...	852	154	1,500	11,900
18	XI Brig., D. Battery, R. Art., Agra ...	...	...	...	November 1866, from Meerut ...	133	24	22,600	142,000
19	XXII Brig., 7 Battery, R. Art., Agra ...	...	...	...	April 1868, from Darjeeling ...	66	105	...	2,000
20	103rd Regiment, Morar and Gwalior ...	...	...	1867 c	February 1867, from Bombay Presidency...	790	...	20,000	1,000
21	F. Brig., C. Battery, R. H. Art., Morar ...	...	...	...	December 1865, from Meerut ...	124	...	20,000	1,000
22	XI Brig., E. Battery, R. Art., Morar ...	...	...	...	March 1865, from Futtelghur ...	106	...	...	...
23	XXII Brig., 5 Battery, R. Art., Morar ...	...	...	...	...	75	...	...	...
24	XXIV Brig., 5 Battery, R. Art., Morar ...	...	...	...	January 1865, from Lucknow ...	60	...	...	...
25	93rd Regiment, Jhansi ...	...	...	1857 a	January 1867, from Sealkote ...	709	...	...	...
26	XXII Brig., B. Battery, R. Art., Jhansi ...	...	...	...	...	105	...	...	...
27	1-7th Regiment, Saugor ...	...	...	1857 a	January 1860, from Ferozepore ...	722	...	...	...
28	XVI Brig., E. Battery, R. Art., Saugor ...	...	...	...	January 1867, from Allahabad ...	139	...	...	...
29	XXV Brig., 1 Battery, R. Art., Saugor ...	...	...	...	January 1865, from Delhi ...	58	...	...	...
30	Detachment 1-7th Regiment, Nowgong ...	...	...	...	...	(193)	...	...	...
31	1-23rd Regiment, Jubbulpore ...	...	...	1867 a	December 1865, from Agra ...	830	...	...	...
32	XVI Brig., G. Battery, R. Art., Jubbulpore ...	...	...	...	January 1867, from Hazareebaugh ...	130	...	...	...
33	Detachment 23rd Regiment, Nagode ...	...	...	...	...	(203)	...	...	...
REGIMENTS OF ROHILCUND, MEERUT, AGRA, AND CENTRAL INDIA ...						9,437	...	270,000	...

a. From England.

c. From Bombay Presidency.

AGRA, and CENTRAL INDIA.—Continued.

		CAUSES OF ADMISSIONS INTO HOSPITAL, OF DEATHS IN AND OUT OF HOSPITAL, AND OF THE INVALIDING OF 1887.																													
Total Admissions, and Loss of the Year by Death and Invaliding.		Cholera.	Smallpox.	Intermittent Fevers.	Remittent and Continued Fevers.	Dysentery.	Diarrhoea.	Erysipelas.	Ophthalmia.	Rheumatism and Rheumatic Affections.	Primary Venereal Affections.	Secondary Venereal Affections.	Scurvy.	Anæmia and Debility.	Phthisis Pulmonalis and Hemoptysis.	Apoplexy, Epilepsy, and Brain Affections.	Neuralgic Affections.	Drunkenness.	Delirium Tremens.	Heart Disease and Aneurism.	Tonsillitis, Bronchitis, and Asthma.	Pleurisy and Pneumonia.	Spleen Disease.	Hepatitis.	Functional derangements of the Digestive System.	Diseases of the Urinary System.	Diseases of the Generative System.	Abscess and Ulcer.	Injuries and Accidents.	Punished.	All other causes.
16	{ Admissions 288	1	23	9	6	8	4	12	09	9	2	2	2	11	4	18	5	14	6	1	7	37	33	6							
17	{ Admissions 1,141	...	216	109	31	58	48	33	230	20	18	16	3	8	10	4	16	57	48	50	17	50	43	3	27						
18	{ Admissions 125	...	22	5	1	5	2	7	25	8	4	...	1	2	4	5	...	1	...	10	3	1	7	10	2						
19	{ Admissions 89	...	19	6	...	2	1	1	18	8	1	1	1	...	...	...	4	2	...	7	3	3	5	7	...						
20	{ Admissions 1,412	17	720	14	22	99	33	39	71	11	11	1	18	20	23	4	2	50	5	7	25	12	2	4	71	52	...	16			
21	{ Admissions 253	6	51	2	2	17	6	14	24	3	1	7	2	4	5	7	1	1	25	1	5	28	1	12	29	...	4				
22	{ Admissions 162	1	16	...	...	23	8	3	11	2	4	...	2	1	4	1	1	10	1	...	14	...	2	21	22	...	5				
23	{ Admissions 164	...	54	...	1	14	3	3	3	1	1	...	...	5	6	2	4	11	1	3	24	1	...	10	11	...	6				
24	{ Admissions 109	...	28	1	1	1	...	6	12	...	8	2	...	1	6	1	2	7	1	1	10	7	...	2	8	...	4				
25	{ Admissions 1,400	...	537	330	27	55	7	51	45	12	42	2	2	17	22	3	1	11	1	5	35	42	12	10	41	44	...	10			
26	{ Admissions 331	...	101	2	6	24	1	13	46	1	3	...	...	...	8	3	2	26	...	7	9	15	3	24	28	...	4				
27	{ Admissions 1,159	...	502	4	14	63	13	37	110	7	9	4	2	11	8	4	3	63	2	3	47	45	5	15	77	68	...	30			
28	{ Admissions 276	...	127	4	5	8	3	8	26	2	3	1	...	12	1	...	...	10	1	1	13	6	...	15	18	...	4				
29	{ Admissions 213	...	124	12	...	16	1	4	7	...	1	...	1	9	...	...	...	4	...	7	4	...	...	11	4	...	6				
30	{ Admissions (213)	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
31	{ Admissions 1,373	...	640	8	25	32	1	21	117	84	12	20	5	2	26	8	3	5	36	4	24	46	41	3	18	94	59	...	30		
32	{ Admissions 319	...	142	...	12	13	1	5	11	30	3	...	2	1	4	1	1	2	5	3	3	10	8	2	7	18	33	...	2		
33	{ Admissions (261)	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
{ Admissions 14,954		188	10	4,455	830	330	921	7	357	864	1,446	236	12	203	90	100	231	170	53	97	658	81	79	184	707	57	190	905	847	4	302

* Invalided from Head Quarters.

TABLE

3.—REGIMENTS of									
REGIMENTS & BATTERIES, & STATION OF 1867.				Year of arrival in the Bengal Presidency.	Date of Arrival from Station previously occupied.	Average Strength during 1867.	Local strength 1864.		
1	21st Hussars, Umballa	...	...	*	November 1863, from Muttra	418			
2	94th Regiment, Umballa	...	...	1858 a	February 1865, from Kussowlie & Umritsur	633			
3	A. Brigade, E. Battery, R. H. Art., Umballa	...	...	1865 a	March 1865, from England	144			
4	F. Brigade, A. Battery, R. H. Art., Umballa	...	...	.....	March 1864, from Rawulpindee	133			
5	82nd Regiment, Jullundur	...	...	1857 a	April 1867, from Meean Meer	800			
6	XIX Brigade, G. Battery, R. Art., Jullundur	...	...	.....	January 1866, from Peshawur	144			
7	1-5th Regiment, Ferozepore	...	...	1867 a	February 1867, from England	704			
8	XIX Brigade, A. Battery, R. Art., Ferozepore	...	...	.....	January 1864, from Peshawur	137			
9	XXIV Brigade, 6 Battery, R. Art., Govindghur	...	...	.....	April 1865, from Mooltan	69			
10	106th Regiment, Meean Meer	...	...	* 1867 c	March 1867, from Bombay Presidency	854			
11	A. Brigade, B. Battery, R. H. Art., Meean Meer	...	...	1866 a	March 1866, from England	133			
12	XIX Brigade, F. Battery, R. Art., Meean Meer	...	...	.....	March 1864, from Rawulpindee	134			
13	XXIV Brigade, 2 Battery, R. Art., Meean Meer	...	...	.....	March 1864, from Peshawur	65			
14	XXII Brigade, 6 Battery, R. Art., Fort Lahore	...	...	.....	.....	53			
15	7th Hussars, Sealkote	...	...	1857 a	December 1864, from Campbellpore	469			
16	38th Regiment, Sealkote	...	...	1857 a	November 1866, from Subathoo	1,005			
17	F. Brigade, B. Battery, R. H. Art., Sealkote	...	...	.....	January 1866, from Peshawur	125			
18	35th Regiment, Mooltan	...	...	1854 a	February 1865, from Fyzabad	657			
19	XIX Brigade, D. Battery, R. Art., Mooltan	...	...	.....	December 1864, from Rawulpindee	143			
20	XXIV Brigade, 1 Battery, R. Art., Mooltan	...	...	.....	March 1865, from Govindghur	69			
21	88th Regiment, Rawulpindee	...	...	1857 a	February 1867, from Cawnpore	827			
22	3rd Battalion Rifle Brigade, Rawulpindee	...	...	1857 a	December 1865, from Nowshera	959			
23	F. Brigade, D. Battery, R. H. Art., Rawulpindee	...	...	.....	April 1866, from Peshawur	129			
24	XIX Brigade, B. Battery, R. Art., Rawulpindee	...	...	.....	January 1865, from Mooltan	123			

a. From England.

c. From Bombay Presidency.

* Reorganized from Local Regiments.

the PUNJAB.

CAUSES OF ADMISSIONS INTO HOSPITAL, OF DEATHS IN AND OUT OF HOSPITAL, AND OF THE INVALIDING OF 1907.

Total Admissions and Loss of the Year by Death and Invaliding.		CAUSES OF ADMISSIONS INTO HOSPITAL, OF DEATHS IN AND OUT OF HOSPITAL, AND OF THE INVALIDING OF 1907.																														
		Cholera.	Smallpox.	Intermittent Fevers.	Remittent and Continued Fevers.	Dysentery.	Diarrhoea.	Erysipelas.	Ophthalmia.	Rheumatism and Rheumatic Affections.	Primary Venereal Affections.	Secondary Venereal Affections.	Scurvy.	Anæmia and Debility.	Phthisis Pulmonalis and Hemoptysis.	Apoplexy, Epilepsy, and Brain Affections.	Neuralgic Affections.	Drunkenness.	Delirium Tremens.	Heart disease and Anæmism.	Tonsillitis, Bronchitis, and Asthma.	Pleurisy and Pneumonia.	Spleen Disease.	Hepatitis.	Functional derangements of the Digestive System.	Diseases of the Urinary System.	Diseases of the Genes- tive System.	Abscess and Ulcer.	Injuries and Accidents.	Punished.	All other causes.	
1	{ Admissions 504 Deaths 8 Invaliding 27	4	2	134	9	3	25	1	10	31	22	21	1	17	...	4	10	3	2	25	41	...	...	17	37	...	5	21	63	...	5
2	{ Admissions 946 Deaths 28 Invaliding 11	23	14	288	17	16	105	...	30	52	79	28	6	5	6	8	12	1	1	35	3	7	39	46	3	11	71	67	1	19		
3	{ Admissions 165 Deaths 4 Invaliding 6	...	...	84	4	1	21	...	2	3	5	6	...	...	...	...	...	...	...	2	3	...	2	1	5	...	...	7	15	...	4
4	{ Admissions 180 Deaths 4 Invaliding 8	1	1	71	6	...	12	...	1	10	10	2	7	3	2	1	1	...	...	1	2	1	1	6	4	...	2	13	20	...	3
5	{ Admissions 823 Deaths 2 Invaliding 57	12	9	245	34	7	55	4	20	71	68	10	12	7	7	16	24	2	...	33	4	3	42	33	5	14	36	44	1	14		
6	{ Admissions 115 Deaths 3 Invaliding 4	...	...	21	7	...	5	...	3	3	8	1	2	1	...	2	1	4	1	4	2	...	5	6	...	4	13	19	...	3	
7	{ Admissions 986 Deaths 18 Invaliding 11	7	...	34	371	24	70	1	30	20	34	10	1	7	6	19	20	17	3	6	51	4	...	12	41	1	15	84	73	...	26	
8	{ Admissions 184 Deaths 2 Invaliding 5	13	2	6	17	6	10	...	1	13	47	1	...	...	...	1	7	9	1	...	14	...	1	6	8	...	...	16	15	...	2
9	{ Admissions 89 Deaths 1 Invaliding 1	...	...	33	1	3	3	...	...	6	12	...	...	...	2	...	2	1	...	1	1	...	1	3	1	1	2	9	4	...	3
10	{ Admissions 2,029 Deaths 69 Invaliding 55	79	1	1,129	36	29	96	3	59	47	80	75	16	21	62	33	11	4	9	26	13	7	24	30	3	9	37	57	...	35		
11	{ Admissions 232 Deaths 2 Invaliding 9	4	2	51	30	2	17	...	4	8	8	1	7	1	...	...	...	1	...	7	9	6	2	9	11	2	1	21	21	...	3
12	{ Admissions 185 Deaths 2 Invaliding 12	4	...	50	11	1	9	...	5	6	13	3	6	1	3	...	2	...	5	13	1	...	4	1	...	...	...	9	5	...	...
13	{ Admissions 89 Deaths 3 Invaliding 3	...	...	43	6	...	...	...	1	3	8	2	...	...	...	1	...	2	...	...	4	1	...	4	1	...	...	12	11	...	1
14	{ Admissions 185 Deaths 4 Invaliding 9	3	2	112	1	1	9	1	6	3	12	...	1	1	...	...	...	1	...	...	4	1	...	4	1	...	...	...	...	...	5
15	{ Admissions 330 Deaths 1 Invaliding 11	...	1	6	76	...	17	...	5	16	23	12	...	...	4	1	16	3	1	1	21	2	...	13	26	4	6	29	50	...	5
16	{ Admissions 1,573 Deaths 13 Invaliding 43	3	1	554	10	27	50	71	50	153	14	1	14	5	4	10	5	1	43	156	11	7	50	69	1	16	86	90	...	21		
17	{ Admissions 155 Deaths 1 Invaliding 6	...	1	28	1	1	14	4	6	11	3	...	...	...	...	1	10	3	...	...	10	...	2	5	9	2	1	18	20	...	5
18	{ Admissions 409 Deaths 1 Invaliding 7	3	...	65	13	12	29	1	2	27	41	3	10	12	3	4	2	1	3	36	...	...	17	44	1	5	26	27	...	18	
19	{ Admissions 124 Deaths 4 Invaliding 4	...	...	23	2	4	7	6	1	15	2	...	1	4	2	3	...	...	...	5	1	...	...	...	...	...	...	...	...	...	4
20	{ Admissions 60 Deaths 3 Invaliding 3	...	...	8	...	6	1	...	...	2	18	3	...	2	1	1	...	...	...	2	...	2	...	2	1	...	1	5	5	...	2
21	{ Admissions 674 Deaths 10 Invaliding 22	3	1	163	130	21	10	1	16	27	91	22	3	3	...	1	13	3	...	42	7	...	13	24	2	5	14	40	...	9		
22	{ Admissions 916 Deaths 5 Invaliding 34	1	...	152	67	9	37	23	57	130	13	2	13	2	8	16	12	2	4	45	8	10	29	30	8	10	72	134	...	24		
23	{ Admissions 309 Deaths 4 Invaliding 6	...	...	41	...	...	5	2	8	7	3	1	2	...	3	5	...	...	...	1	1	12	1	5	13	11	...	33	46	...	10
24	{ Admissions 238 Deaths 1 Invaliding 6	49	4	...	6	2	13	15	...	3	2	...	3	2	...	9	4	...	2	11	...	3	20	20	1	...	9	53	...	13

TABLE

REGIMENTS of the

REGIMENTS of the								
REGIMENTS & BATTERIES, & STATION of 1867.			Year of arrival in the Bengal Presidency.	Date of Arrival from Station previously occupied.	Average Strength during 1867.	Amalgamated with, & Average Strength.	Loss per 1000.	
							By Death.	By Invaliding.
25	20th Hussars, Campbellpore ...	...	*	December 1864, from Sealkote...	448	108	27.47	31.46
26	XXV Brigade, 4th Battery, R. Art., Attock ...	.....		January 1865, from Allahabad ...	64	163	78.12	31.25
27	1-19th Regiment, Nowshera ...	...	1857 a	February 1867, from Peshawur ...	863	140	21.63	44.55
28	42nd Regiment, Peshawar† (11 months) ...	...	1857 a	November 1865, from Rawalpindie ...	634	115	139.42	.....
29	77th Regiment, Peshawur ...	...	1858	February 1867, from Bareilly ...	793	237	67.19	41.67
30	F. Brig., E. Battery, R. H. Art., Peshawur...	...	.....	April 1866, from Meera Meer ...	135	281	140.74	60.67
31	F. Brig., F. Battery, R. H. Art., Peshawur ...	...	.....	December 1865, from Sealkote ...	132	262	166.06	60.60
32	XIX Brig., E. Battery, R. Art., Peshawur ...	...	.....	December 1865, from Jullundur ...	134	253	171.64	62.24
33	XXII Brig., 4th Battery, R. Art., Peshawur ...	...	.....	January 1866, from Meerut ...	40	245	163.26	61.22
REGIMENTS OF THE PUNJAB ...					12,158	140	38.74	42.74

4.—REGIMENTS continued during

1	XXV Brig., 5th Battery, R. Art., Darjeeling	...	.....	From Field Service in Bhootan, March 1866	75	197	13.33	38.99
2	53th Regiment, Head Quarters, Darjeeling	...	1864 a	From Benares, January 1866	467	61	6.13	10.71
3	90th Regiment, Subathoo†	...	1857 a	March 1867, from Nowshera	802	126	33.65	64.55
4	104th Regiment, Dugshale	...	*	April 1867, from Jhansi	848	95	5.91	36.64
5	{ Road-making Detachments from 88th Regiment and 3rd Bat. Rifle Brigade, Murree Hills (6 months, May to Oct.) }			Detached from Rawulpindie in May	(844)	14	.....	.....
HILL STATIONS OF THE BENGAL PRESIDENCY					2,190	99	13.27	37.90

5.—DEPOTS and

1	Chinsurah Depot ...	.....	.....	.....	.....	.....	.....
2	Chunar Invalid Garrison ...	.....	.....	.....	61	.....	.....
3	Deaths in Kurrachee Depot of men belonging to Bengal Regiments ‡	.....	.....	.....	.....	.....	.....

a From England.

* Reorganized from Local Regiments.

† The 42nd Regiment was in camp at Cheerat for four months from July to October. By its removal from the Peshawur valley, this Regiment avoided the fever from which it is necessary again to note, that the Annual Regimental Returns are not to be accepted as a strictly accurate record of the relation of disease to the locality occupied death from cholera in the Mountain Battery took place at Dam-Dam, previous to the embarkation of the Battery for Abyssinia.

‡ The deaths of the Kurrachee Depot do not appear in the mortality of the year, since after embarkation at Moultan, men are no longer recognised as belonging to

PUNJAB—Continued.

		CAUSES OF ADMISSIONS INTO HOSPITAL, OF DEATHS IN AND OUT OF HOSPITAL, AND OF THE INVALIDING ON 1897.																													
Total Admissions and Loss of the Year by Death and Invaliding.		Cholera.	Smallpox.	Intermittent Fever.	Remittent and Continued Fever.	Dysentery.	Malaria.	Erysipelas.	Ophthalmia.	Rheumatism and Rheumatic Affections.	Primary Venereal Affections.	Secondary Venereal Affections.	Scurvy.	Anemia and Debility.	Phthisis Pulmonalis and Hemoptysis.	Aneurysm, Spitzky, and Brain Affections.	Neuralgic Affections.	Drunkennes.	Delirium Tremens.	Heart Disease and Aneurysm.	Tuberculosis, Bronchitis, and Asthma.	Pleurisy and Pneumonia.	Splen Disease.	Hepatitis.	Functional derangements of the Digestive System.	Diseases of the Urinary System.	Diseases of the Genes- tive System.	Abcess and Other.	Injuries and Accidents.	Poisoned.	All other causes.
25	{ Admissions 471 Deaths 10 Invaliding 14	...	...	39	55	3	12	13	23	15	...	1	...	10	3	5	41	14	3	4	21	1	...	3	58	8	7	46	64	...	39
26	{ Admissions 125 Deaths 5 Invaliding 2	1	...	34	4	1	15	1	19	...	...	...	1	1	...	3	5	...	...	2	...	...	...	7	13	...	1	13	5	...	...
27	{ Admissions 1,346 Deaths 21 Invaliding 38	5	2	741	23	15	50	...	9	33	35	2	...	27	3	10	14	5	4	2	29	3	4	60	43	9	11	98	36	...	16
28	{ Admissions 717 Deaths 57 Invaliding 1	135	...	99	56	32	104	...	5	36	34	4	...	11	1	5	8	...	...	1	28	3	...	23	25	...	11	14	33	1	10
29	{ Admissions 1,660 Deaths 61 Invaliding 23	75	...	790	484	43	113	1	12	39	55	9	...	29	3	8	5	13	2	2	14	10	13	41	30	...	3	52	39	...	9
30	{ Admissions 390 Deaths 19 Invaliding 9	26	...	102	66	24	31	...	3	9	9	2	5	6	...	1	...	...	1	...	13	6	2	26	5	3	3	9	24	...	5
31	{ Admissions 246 Deaths 11 Invaliding 8	16	1	129	48	2	39	...	1	7	4	3	...	3	1	2	4	...	...	1	24	2	5	16	6	1	3	10	16	...	4
32	{ Admissions 339 Deaths 23 Invaliding 7	30	2	109	53	5	33	...	4	5	10	...	...	5	5	3	2	1	...	...	18	3	...	10	5	1	3	17	13	...	2
33	{ Admissions 120 Deaths 5 Invaliding 3	5	...	47	6	2	8	...	1	...	8	1	...	1	...	...	...	3	...	...	9	1	1	6	9	...	...	4	6	...	...
{ Admissions 17,039 Deaths 471 Invaliding 617		439	9	5,467	1,636	361	1,062	13	349	652	1,089	253	12	217	95	166	301	166	36	121	737	95	75	535	654	54	149	774	1153	3	305

the Year at HILL STATIONS.

1	{ Admissions 80 Deaths 2 Invaliding 3	1	11	1	1	5	...	1	1	19	...	...	1	1	2	...	1	...	6	...	3	12	3	1	1	2	6	...	1	
2	{ Admissions 285 Deaths 3 Invaliding 5	...	8	22	6	24	1	9	22	22	5	...	6	7	5	1	1	...	5	20	...	1	13	26	...	8	15	47	...	11
3	{ Admissions 1,008 Deaths 31 Invaliding 41	31	237	6	15	194	...	18	80	60	2	...	12	...	17	...	...	...	61	16	12	92	37	5	11	31	56	3	24	
4	{ Admissions 806 Deaths 5 Invaliding 31	...	299	...	18	94	2	8	29	84	5	...	8	4	1	7	9	...	12	29	3	2	16	30	2	9	30	77	2	26
5	{ Admissions (91)** Deaths ...	...	17	6	2	2	2	4	18	3	...	...	...	1	...	...	1	...	7	...	...	3	3	...	1	4	17	...	...
	{ Admissions 2,179 Deaths 40 Invaliding 83	33	556	29	40	317	3	34	132	185	12	...	14	24	7	27	10	1	17	116	19	18	123	96	8	29	79	136	5	63

INVALID GARRISON.

1	{ Admissions 421 Deaths 16	4	...	57	4	28	23	...	5	30	33	21	...	27	20	16	7	4	4	8	7	4	1	21	13	3	7	25	19	...	31
2	{ Admissions 26 Deaths 3	...	...	6	...	1	1	1	...	1	1	1	...	1	...	1	...	2	3	...	...	...	1	...	2	...	3	1	...	...	1
3	{ Deaths ...	15	...	...	2	1	1	...	...	...	...	...	...	...	...	1	...	...	...	1	1	2	3	...	...	...	...	...	...	...	1

** Already included in the Returns from Head Quarters.

which the 77th Regiment suffered so severely; but dysentery of a bad type became prevalent, and 15 deaths from dysentery and hepatitis occurred during these months, by a Regiment during the year. The deaths from fever in the 90th Regiment occurred while the Regiment was on the march from Nowshera to Subathoo, and the this Presidency. With three exceptions, these names have already appeared in the loss of the Presidency, in the Invaliding Rolls of 1896 and 1897.

TABLE

6.—CONVALESCENT

6.—CONVALESCENT										
CONVALESCENT DEPOTS.					Period of Occupation.		Average Strength during the Period of Occupation.	Admission-rate of 1887, per cent. of Average Strength.	Loss per 1000.	
									By Death.	By Invaliding.
1	Parianath*	...	...	...	Occupied from April to October	...	23	177		†
2	Darjeeling...	...	...	...	Occupied from April to November	...	145	80	31.42	62.07
3	Nyneer Tal ...	...	...	...	Occupied from April to November	...	343	153	17.49	102.40
4	Landour ...	...	...	...	Occupied from April to November	...	205	163	31.16	253.66
5	Kussowlie ...	...	...	...	Occupied from April to November	...	327	103	24.17	185.72
6	Dhumsalla	...	...	...	Occupied from April to November	...	107	112	29.04	†
7	Family Camp near Murree	...	...	...	Occupied from June to October	...	65			
8	Murree	...	...	...	Occupied from May to October	...	280	84	28.57	182.14
CONVALESCENT DEPOTS OF THE BENGAL PRESIDENCY							1,494	117	27.14	108.00
EUROPEAN ARMY OF THE BENGAL PRESIDENCY							34,642	125.7	31.77	10.11

* The Parianath Depot was broken up at the end of

† Invaliding took place after the return of

† Except in regard to the number of admissions, the Summary of the Annual Regimental Returns differs very slightly from the results exhibited in the General Tables occurred in Regiments present for a few weeks or days at the beginning or close of the year, which are not taken into account in Table XVI. The total of omitted; the deficiency of 1,100 admissions in the Regimental Statement is explained by this circumstance, and by the fact of the omission of fragmentary Returns.

ANNUAL RELIEF OF

ROYAL HORSE ARTILLERY.

A. Brigade	B. Battery	From Meean Meer	To Peshawur	...	Arrived	March	1893.
	E. Battery	" Umballa	" Peshawur	...	Arrived	March	1893.
P. Brigade	E. Battery	" Peshawur	" Umballa	...	Arrived	April	1893.
	F. Battery	" Peshawur	" Meean Meer	...	Arrived	March	1893.

ROYAL ARTILLERY.

8th Brigade	C. Battery	From Fyzabad	To Morar	...	Arrived	November	1897.
	D. Battery	" Secetapore	" Bareilly	...	Arrived	November	1897.
	E. Battery	" England	" Fyzabad	...	Arrived	April	1898.
	F. Battery	" England	" Secetapore	...	Arrived	April	1898.
	G. Battery	" England	" Cawnpore	...	Arrived	April	1898.
	H. Battery	" England	" Agra	...	Arrived	March	1898.
11th Brigade	D. Battery	" Agra	" England	...	Embarked	November	1897.
	E. Battery	" Morar	" England	...			
	F. Battery	" Bareilly	" England	...			
	G. Battery	" Cawnpore	" England	...			
19th Brigade	A. Battery	" Ferozepore	" Jhansi	...	Arrived	January	1898.
	E. Battery	" Peshawur	" Rawul Pindies	...	Arrived	April	1898.
22nd Brigade	B. Battery	" Jhansi	" Ferozepore	...	Arrived	January	1898.
25th Brigade	1 Battery	" Saugor	" Darjeeling	...	Arrived	April	1898.
	5 Battery	" Darjeeling	" Abyssinia	...	Embarked	January	1898.

CAVALRY REGIMENTS.

2nd Dragoon Guards	From Muttra	To Mhow	...	Marched	November	1897.
7th Dragoon Guards	" Benares	" England	...	Embarked	September	1897.
4th Hussars	" England	" Meerut	...	Arrived	March	1898.
11th Hussars	" Mhow	" Muttra	...	Arrived	January	1898.
19th Hussars	" Meerut	" Benares	...	Arrived	January	1898.

DEPOTS.

DEPOTS.		CAUSES OF ADMISSIONS INTO HOSPITAL, OF DEATHS IN AND OUT OF HOSPITAL, AND OF THE INVALIDING OF 1867.																														
Total Admissions and Loss of the Year by Death and Invaliding.		Cholera.	Smallpox.	Intermittent Fevers.	Remittent and Continued Fevers.	Dysentery.	Diarrhoea.	Erysipelas.	Ophthalmia.	Rheumatism and Rheumatic Affections.	Primary Venereal Affections.	Secondary Venereal Affections.	Scurvy.	Anæmia and Debility.	Phthisis Pulmonalis and Hemoptysis.	Apoplexy, Epilepsy, and Brain Affections.	Neuralgic Affections.	Drunkenness.	Delirium Tremens.	Heart Disease and Aneurism.	Tonsillitis, Bronchitis, and Asthma.	Pleurisy and Pneumonia.	Spleen Disease.	Hepatitis.	Functional derangements of the Digestive System.	Diseases of the Urinary System.	Diseases of the Generative System.	Abscess and Ulcer.	Injuries and Accidents.	Furnished.	All other causes.	
1	Admissions	39	...	14	1	1	2	1	1	1	7	3	2	...	6
	Deaths	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Invaliding	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
2	Admissions	135	...	22	...	4	8	...	5	13	9	4	...	2	2	2	8	...	...	...	2	1	2	19	8	...	3	3	2	...	6
	Deaths	5	...	1	...	1	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Invaliding	9	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
3	Admissions	327	...	64	11	19	21	...	4	46	53	44	...	9	...	2	29	9	19	1	7	79	37	7	7	22	9	...	6
	Deaths	6	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...	...	...	...	1	9	...	1	13	1	...	...	...	...	...
	Invaliding	69	...	...	...	4	1	...	...	...	...	11	...	11	...	1	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...
4	Admissions	335	...	64	5	9	17	...	1	80	9	14	6	9	4	1	2	1	21	1	8	29	19	...	10	13	11	...	1
	Deaths	7	...	1	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Invaliding	52	...	2	2	2	1	...	...	...	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...
5	Admissions	339	1	76	6	8	43	...	2	73	19	10	...	6	2	4	7	1	11	1	3	15	14	4	6	11	10	...	5
	Deaths	8	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Invaliding	61	...	1	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
6	Admissions	120	1	22	...	2	15	9	6	13	...	1	6	4	3	3	3	1	16	8	2	2	...	3
	Deaths	3	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Invaliding	4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
7	Admissions	28	1	2	3	1	5	...	2	1	...	...	...	...	1	...	...	...	...	...	1	...	...	...	9	...	...	...	1	...	1
	Deaths	2	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Invaliding	9	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
8	Admissions	234	4	49	5	10	19	1	5	19	14	6	15	...	1	11	...	...	...	...	3	3	3	25	17	1	5	12	6	...	...
	Deaths	8	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Invaliding	51	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
{	Admissions	1,746	7	353	31	64	130	1	19	244	110	62	6	42	16	14	60	11	60	10	24	190	112	12	31	66	43	...	29
	Deaths	41	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Invaliding	261	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
{	Admissions	47,733	724	26	12,413	3557	1230	3170	36	1002	2319	4603	517	32	673	315	364	903	635	134	302	199	277	219	1767	2,169	203	544	2637	3189	18	1063
	Deaths	1,667	175	4	27	65	67	27	2	17	157	10	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
	Invaliding	1,633	...	95	11	11	67	27	2	17	157	10	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	

November; it will not be occupied in future.

the men to their respective Regiments.

showing the prevalence of disease throughout the year. The Strength in the one case is taken as 34,603; in the other, as 34,642. The four deaths which are deficient, the admissions here shown, does not include the admissions of Depts., which are supposed to be incorporated in the Annual Regimental Returns, but are frequently The ratio shown in Table I., 141 per cent., may be received as the correct Admission-rate of the year.

THE ARMY, 1867-68.

INFANTRY REGIMENTS.

1-6th Regiment	From England	To Rawul Pindee	... Arrived	March 1868.
2-12th Regiment	Seetapore & Rae Bareilly	Jubbulpore & Nowgong	... Arrived	December 1867.
1-19th Regiment	Nowshera	Rawul Pindee	... Arrived	February 1868.
1-23rd Regiment	Jubbulpore	Bombay Presidency	... Marched	November 1867.
2-25th Regiment	Ceylon	Berhampore (Wing)	... Arrived	January 1868.
		Shahjehanpore (Hd. Qrs.)	Arrived	April 1868.
26th Regiment	England*	Dum-Dum	... Arrived	July 1868.
27th Regiment	Dum-Dum	England	... Embarked	November 1867.
35th Regiment	Mooltan	England	... Embarked†	November 1867.
36th Regiment	Shahjehanpore & Moradabad	Peshawur	... Arrived	January 1868.
42nd Regiment	Peshawur	England	... Embarked	December 1867.
46th Regiment	Lucknow	Bombay Presidency	... Marched	November 1867.
2-60th Regiment	England	Fort William	... Arrived	October 1867.
77th Regiment	Peshawur	Nowshera	... Arrived	January 1868.
82nd Regiment	Jullundur	Bombay Presidency	... Embarked†	December 1867.
86th Regiment	England	Meean Meer	... Arrived	April 1868.
90th Regiment	Rawul Pindee	Peshawur	... Arrived	November 1867.
91st Regiment	Hasaroebaugh	Madras Presidency	... Marched	November 1867.
92nd Regiment	England	Jullundur	... Arrived	April 1868.
94th Regiment	Umballa	England	... Embarked†	November 1867.
102nd Regiment	Madras Presidency	Lucknow	... Arrived	February 1868.
106th Regiment	Meean Meer	Umballa	... Arrived	April 1868.
109th Regiment	Poona	Mooltan	... Arrived	December 1867.
2nd Bat. Rifle Brigade	Fort William	England	... Embarked	September 1867.
3rd Bat. Rifle Brigade	Rawul Pindee	Seetapore & Moradabad	Arrived	March 1868.

* This Regiment was attached to the Abyssinian Expeditionary Force. † At Mooltan.

EUROPEAN TROOPS, 1867.

XVII.

ADMISSIONS and DEATHS of the WOMEN and CHILDREN of EUROPEAN REGIMENTS.

WOMEN.					CHILDREN.				
AVERAGE STRENGTH, 3,008.					AVERAGE STRENGTH, 4,888.				
Admitted during the year...	4,068.	Per cent. of Strength ...	135.90		Admitted during the year...	4,737.	Per cent. of Strength ...	96.91	
Died ...	139.	Per 1,000 of Strength ...	46.31		Died ...	513.	Per 1,000 of Strength ...	104.95	
CAUSES OF ADMISSIONS AND DEATHS.	Admitted.	Died.	Admitted per cent. of Strength.	Died per 1,000 of Strength.	CAUSES OF ADMISSIONS AND DEATHS.	Admitted.	Died.	Admitted per cent. of Strength.	Died per 1,000 of Strength.
Varicella	3	...	...	...	Varicella	4	1	.08	.21
Morbili	3	...	...	...	Varicella	2	...	...	...
Pertussis	1	...	...	...	Morbili	203	5	4.15	1.02
Tonsillitis	35	...	...	...	Scarlatina	3	...	...	...
Febris Intermittens	837	4	27.83	...	Parotitis	12	...	...	...
Remittens	85	3	9.47	5.32	Tonsillitis	29	1	...	...
Continua	200	9	9.77	...	Diphtheria	1	...	2.15	1.23
Ophthalmia	294	...	...	...	Influenza	33	...	...	...
Erysipelas	3	...	...	...	Pertussis	32	3	...	...
Pyemia	1	...	...	...	Cynanche Trachealis	6	2	...	...
Anthrax	1	...	...	...	Febris Intermittens	845	18	...	...
Influenza	13	...	...	...	Remittens	143	21	28.98	11.05
Dysentery	173	19	6.75	...	Continua	183	15	...	...
Diarrhoea	312	9	10.37	9.31	Ophthalmia	1,127	...	23.08	...
Cholera	93	58	5.10	19.28	Erysipelas	2	2	...	...
Rheumatismus	68	...	1.93	...	Furunculus	7	...	...	...
Scorbutus	1	...	...	...	Dysentery	158	21	18.76	27.41
Ebricitas	2	...	...	...	Diarrhoea	759	113	...	...
Delirium Tremens	1	...	...	...	Cholera	120	94	2.45	19.23
Vermes	2	...	...	...	Rheumatismus	11	...	...	...
Tenia	2	...	...	...	Gonorrhoea	3	...	...	...
Anaemia	115	1	...	...	Syphilis Secundaria	6	...	...	...
Anasarca	2	...	...	...	Scorbutus	2	...	...	...
Carcinoma	1	...	...	...	Aphtha	5	...	...	...
Scrofula	1	...	...	...	Porrigi	1	1	...	...
Phthisis Pulmonalis	23	10	.77	3.33	Scabies	2	...	...	...
Hæmoptysis	8	...	...	...	Vermes	13	...	...	...
Tuberculosis Mesenterica	1	...	...	...	Tenia	15	...	...	...
Insolatio	7	3	.23	1.00	Anaemia	85	...	...	...
Epilepsia	2	...	...	...	Scrofula	9	1	...	...
Dysæcia	1	...	...	...	Phthisis Pulmonalis	3	...	...	...
Mania	2	...	...	...	Tuberculosis Mesenterica	38	19	1.51	7.37
Melancholia	1	...	...	...	Morbus Coxæ	1	...	...	...
Chorea	2	...	...	...	Meningitis	10	7	...	...
Hysteria	16	...	...	...	Hydrocephalus	13	10	...	...
Cephalæa	7	...	...	...	Insolatio	11	7	.23	1.41
Neuralgia	11	...	...	...	Epilepsia	5	...	...	...
Otitis	12	...	...	...	Convulsio	74	59	1.51	11.87
Pericarditis	1	...	...	...	Tetanus	1	...	...	...
Morbus Cordis	2	...	.07	...	Chorea	1	...	...	...
Angina Pectoris	1	...	...	...	Hysteria	5	...	...	...
Aneurisma	1	...	...	...	Neuralgia	1	...	...	...
Palpitatio	1	...	...	...	Cephalæa	1	...	...	...
Phlebitis	1	...	...	...	Otitis	10	...	...	...
Varix	1	...	...	...	Morbus Cordis	2	...	...	...
Epistaxis	2	...	...	...	Hæmorrhagia	1	1	...	...
Laryngitis	2	...	...	...	Epistaxis	1	...	...	...
Bronchitis	66	1	2.56	.67	Laryngitis	3	3	...	...
Pleuritis	3	1	...	...	Bronchitis	125	11	2.69	3.48
Pneumonia	1	...	...	...	Pleuritis	1	...	...	...
Stomatitis	3	...	...	...	Pneumonia	10	8	...	...
Gastritis	5	2	...	...	Stomatitis	4	...	...	...
Enteritis	3	...	...	...	Gastritis	2	...	...	...
Peritonitis	2	...	...	...	Enteritis	5	1	...	...
Obstipatio	13	...	...	...	Hæmatemesia	1	1	...	...
Dyspepsia	238	...	10.64	...	Obstipatio	3	...	...	...
Colica	62	...	...	...	Hernia	1	...	...	...
Hæmorrhoids	7	...	...	...	Dyspepsia	34	...	...	...
Splenitis	4	...	.13	...	Colica	21	1	...	...
Hepatitis	67	5	2.23	1.06	Prolapsus Ani	8	...	...	...
Icterus	1	...	...	...	Splenitis	2	3	.17	.62
Ascites	3	1	...	...	Hepatitis	2	...	.06	...
Nephritis	3	1	...	...	Icterus	1	...	...	...
Ischuria	4	...	...	...	Ascites	3	...	...	...
Lithiasis	1	...	...	...	Orethritis	2	...	...	...
Vesical Fistula	1	...	...	...	Phymosis	2	...	...	...
Leucorrhœa	9	...	...	...	Hydrocele	2	...	...	...
Hysteritis	6	...	...	...	Nephritis	1	1	...	...
Prolapsus Uteri	8	...	2.69	...	Ischuria	5	...	...	...
Ovarian Tumour	1	...	...	...	Enuresis	1	...	...	...
Mammary Tumour	1	...	...	...	Lithotomy	1	...	...	...
Amenorrhœa	10	...	...	...	Amenorrhœa	3	...	...	...
Dysmenorrhœa	29	...	...	...	Arthritis	3	...	...	...
Menorrhagia	17	...	...	...	Synovitis	5	...	...	...
Synovitis	5	...	...	...	Necrosis	1	1	...	...
Phlegmon and Abscess	52	...	...	...	Skin Diseases	21	...	...	...
Ulcer	35	...	2.69	...	Phlegmon and Abscess	32	1	1.00	...
Skin Diseases	6	...	...	...	Ulcer	17	...	...	...
Child-birth	739	...	26.30	2.33	Tumour	1	...	...	...
Abortion	52	2	11.83	1.66	Dentition	165	45	5.37	9.31
Debility	241	4	1.43	...	Atrophy and Debility	303	87	5.37	8.18
Injuries	43	...	...	...	Injuries	83	...	...	...
Cause not specified	1	1	...	...	Foisoning	4	...	1.17	...
					Asphyxia	1	1	...	...
					Cause not specified	1	...	...	...
Ratio for all causes not specially calculated	...	...	5.92	1.66	Ratio for all causes not specially calculated	...	...	4.54	2.66
	4,068	139	135.90	46.31		4,737	513	96.91	104.95

* Including Anæmia.

2. NATIVE ARMY, 1867.

It is to be noted, that in the General Tables the figures are stated to represent the sickness and mortality of a strength of 39,114, and in the Regimental Tables, of 41,516, a difference of 2,400 men. This difference represents the strength of outposts and detachments furnishing no Returns of Sickness, and yet included in the strength of their regiments as present throughout the year. As a record of sickness, the ratios on the lower strength are the more accurate; but the true ratio of mortality must be calculated with reference to all ascertained deaths, absent as well as present, and upon the full strength of men borne on the regimental rolls. Table XIII shows that the strength upon which the death-rate of the year should be calculated is 45,500. With 763 deaths, this strength gives a ratio of 16.77 per 1000, which may be taken as the death-rate of the year, although it is probable that, in some instances, the deaths of men absent at their homes are unrecorded.

NATIVE TROOPS, 1867.

I.

TABLE showing the SICKNESS and MORTALITY among the NATIVE TROOPS serving in the BENGAL PRESIDENCY during the Year 1867, and the prevalence of the principal Diseases in each Month of the Year.

(This Statement is for the Regular Native Army only, and for men present from month to month with their Regiments. The deaths of men who died in the Hospitals of other Regiments have not been included; these are reckoned among the deaths of men absent from their Regiments.—See introductory note.)

MONTHS.	Average Strength.	Average number daily sick.	Number daily sick per cent. of Strength.	Number of Deaths.	Died per 1000 of Strength.	CAUSES OF DEATHS IN HOSPITAL.																	Died out of Hospital.	
						Cholera.	Smallpox.	Fever, Intermittent.	Fever, Remittent.	Fever, Continued.	Apoplexy.	Dysentery.	Diarrhoea.	Hepatitis.	Spleen Disease.	Respiratory Diseases.	Heart Disease.	Phthisis Pulmonalis.	Dropsy.	Scurvy.	Atrophy and Anæmia.	Wounds and Accidents.		All other Causes.
January ...	41,466	1,886	4.07	33	...	...	...	5	2	3	1	1	2	1	1	7	1	...	...	...	...	3	5	...
February ...	41,464	1,880	4.07	29	...	...	1	4	3	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...
March ...	41,606	1,678	4.03	40	...	2	...	10	4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
April ...	38,556	1,477	3.83	40	...	11	2	7	4	2	1	1	1	1	1	3	3	...	...	...	...	...	...	...
May ...	37,454	1,393	3.73	50	...	24	2	7	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...
June ...	37,038	1,413	3.81	48	...	27	1	3	1	1	2	1	1	...	...	...	...	...	...	...	...	...	...	...
July ...	37,116	1,467	4.03	38	...	17	...	2	3	...	1	1	3	...	...	...	...	...	...	...	...	...	...	...
August ...	37,548	1,809	4.28	39	...	15	...	6	3	...	1	1	3	1	...	...	...	...	...	...	...	...	...	...
September ...	37,549	2,179	5.80	29	...	4	...	3	...	1	1	1	5	2	1	2	2	1	1	1	...	...	...	...
October ...	38,130	2,718	7.13	50	...	4	...	8	...	1	1	11	2	1	...	1	1	5	...	...	1	...	...	...
November ...	40,462	2,700	6.67	54	...	3	...	17	...	...	...	3	5	...	2	2	2	5	...	4	...	...	...	...
December ...	39,915	1,973	4.92	63	...	11	...	9	3	1	1	...	7	...	3	2	2	2	...	...	...	1	...	...
						124	6	78	28	13	9	41	28	9	10	36	10	34	4	6	15	17	43	8
Died per 1000 of the Average Strength.																								
For the year ...	39,114	1,834	4.69	511	13.06	3.17	.15	3.04	.23	1.05	.72	.23	.26	.97	.28	.61	.10	.15	.36	.44	1.10	.20		

CAUSES OF ADMISSIONS.	NUMBER OF ADMISSIONS INTO HOSPITAL IN EACH MONTH.												Total admitted during the Year.	Admitted per cent. of Strength.	Died per cent. of Admissions.
	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.			
			
Cholera ...	1	4	15	26	40	55	41	20	9	9	8	16	244	.62	50.93
Smallpox ...	1	10	6	8	5	1	1	...	...	...	...	3	35	.09	17.14
Fever, Intermittent ...	1,375	1,060	1,103	1,521	1,253	1,261	1,063	1,944	4,499	7,047	3,546	2,008	28,581	73.07	.27
Remittent ...	31	30	28	30	34	32	26	35	72	74	18	11	421	1.33	7.71
Continued ...	10	8	11	13	8	...	4	14	21	3	3	3	93	.04	60.00
Apoplexy ...	...	1	...	1	...	6	1	1	1	3	...	1	15	.05	1.25
Dysentery ...	199	197	184	348	219	219	254	245	319	371	313	280	3,149	.608	.18
Diarrhoea ...	168	117	180	205	203	253	306	218	180	207	211	179	2,377	.608	.18
Hepatitis ...	7	8	10	7	6	2	6	7	4	4	3	9	73	.03	.13
Spleen Disease ...	30	37	27	16	18	19	18	12	20	45	45	36	333	.08	.310
Respiratory Diseases ...	205	200	133	101	61	74	92	69	68	97	128	166	1,386	.357	.272
Phthisis Pulmonalis ...	3	4	3	7	3	4	5	5	6	7	2	4	51	.13	47.06
Dropsy ...	1	4	...	...	4	3	3	1	2	3	1	1	23	.06	17.39
Scurvy ...	4	3	...	...	4	5	9	5	4	11	8	5	66	.17	9.09
Rheumatism ...	337	251	188	220	143	177	214	139	160	220	184	244	2,462	.634	...
Veneral Diseases ...	210	147	194	174	129	124	165	92	103	168	132	140	1,778	.455	...
Eye Diseases ...	53	54	60	101	96	68	113	99	104	115	66	48	967	.247	...
Abscess and Ulcer ...	475	380	323	343	285	307	561	471	417	447	375	399	4,753	12.18	...
Wounds and Accidents ...	473	463	401	416	385	367	472	376	397	461	464	399	5,123	13.10	...
All other Causes ...	410	374	446	430	335	316	491	346	308	444	327	353	4,672	11.94	...
	3,961	3,311	3,284	3,973	3,231	3,323	4,745	4,104	6,784	9,756	5,874	4,311	56,627		
Admitted per cent. of Average Strength in each Month.															
	9.90	7.96	7.99	10.30	8.63	8.97	12.78	10.33	17.33	26.59	14.51	10.54	144.77		

NATIVE TROOPS, 1867.

II.

TABLE showing the SICKNESS and MORTALITY among the NATIVE TROOPS serving in BENGAL PROPER and in ASSAM during the Year 1867, and the prevalence of the principal Diseases in each Month of the Year.

MONTHS.	Average Strength.	Average number daily sick.	Number daily sick per cent. of Strength.	Number of Deaths.	Died per 1000 of Strength.	CAUSES OF DEATHS IN HOSPITAL.																	Died out of Hospital.	
						Cholera.	Smallpox.	Fever, Intermittent.	Fever, Remittent.	Fever, Continued.	Apoplexy.	Dysentery.	Diarrhoea.	Hepatitis.	Spleen Disease.	Respiratory Diseases.	Heart Diseases.	Phthisis Pulmonalis.	Dropsy.	Scurvy.	Atrophy and Anæmia.	Wounds and Accidents.		All other Causes.
January	8,990	490	5.13	10	...	...	...	1	1	...	...	...	1	...	...	2	...	...	...	...	...	...	2	...
February	8,056	423	5.25	7	...	1	...	...	2	...	...	1	...	...	...	1	...	...	...	...	...	...	1	...
March	8,418	464	5.51	16	...	5	...	...	3	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...
April	8,524	460	5.40	14	...	4	...	1	3	...	...	1	1	...	...	...	...	...	...	...	...	...	...	...
May	8,314	428	5.15	11	...	6	...	1	...	...	...	2	...	...	...	...	1	...	...	...	...	...	...	...
June	8,004	420	5.25	7	...	2	...	1	1	...	...	...	...	...	...	1	...	...	1	...	...	...	...	...
July	7,990	443	5.55	8	...	2	...	...	3	...	...	1	1	...	...	...	...	2	...	...	...	...	...	...
August	8,239	512	6.21	9	...	1	...	3	2	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...
September	8,173	568	6.95	16	...	1	...	1	1	...	...	4	1	1	2	...	2	...	...	...	...	...	...	...
October	7,947	541	6.81	21	...	2	...	1	2	...	...	4	1	...	2	...	1	2	...	...	...	1	...	...
November	7,322	536	7.32	20	...	3	...	3	...	...	...	1	1	...	2	1	1	1	...	4	...	1	...	...
December	7,412	462	6.23	26	...	10	...	...	2	...	...	2	2	...	2	2	...	...	...	...	1	1	...	...
						37	...	15	19	...	...	18	8	3	6	8	5	6	1	4	5	5	21	2
						Died per 1000 of the Average Strength.																		
For the year	8,115	476	5.87	165	20.33	4.56	...	1.85	2.34	...	...	2.22	.96	.37	.74	.98	.62	.74	.12	.74	.62	.62	2.59	.24

CAUSES OF ADMISSIONS.	NUMBER OF ADMISSIONS INTO HOSPITAL IN EACH MONTH.												Total admitted during the Year.	Admitted per cent. of Strength.	Died per cent. of Admissions.
	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.			
Cholera	1	1	13	12	7	3	9	2	3	7	8	15	81	1.00	45.68
Smallpox	...	1	1	...	1	...	1	...	...	...	...	...	4	.05	...
Fever, Intermittent	327	228	234	380	366	307	567	595	595	651	469	363	5,092	62.76	...
" Remittent	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
" Continued	5	7	10	16	8	5	10	26	13	8	5	3	116	1.43	.65
Apoplexy	...	...	...	...	...	...	...	...	...	1	...	...	1	.01	...
Dysentery	105	93	90	184	114	107	126	73	110	113	87	110	1,311	16.16	1.23
Diarrhoea	72	85	32	78	82	63	89	72	67	67	83	68	908	9.96	16.67
Hepatitis	...	3	3	...	...	...	...	...	...	...	...	...	...	.03	6.12
Spleen Disease	9	11	7	7	1	5	8	7	5	9	11	10	98	1.21	2.25
Respiratory Diseases	64	46	41	34	22	24	17	16	12	20	26	33	355	4.37	66.67
Phthisis Pulmonalis	...	...	...	1	1	1	1	2	1	1	...	1	9	.11	10.00
Dropsy	...	...	...	...	1	3	2	1	1	1	...	1	10	.12	16.22
Scurvy	3	...	1	3	2	...	5	3	3	10	5	3	37	.46	...
Rheumatism...	73	55	48	49	25	43	36	20	32	45	30	40	496	6.11	...
Veneral Diseases	49	30	61	83	31	26	63	29	23	47	29	38	448	5.52	...
Eye Diseases	3	13	10	15	3	11	13	14	12	11	5	7	116	1.43	...
Abscess and Ulcer	104	41	66	70	62	61	106	92	102	99	69	74	929	11.45	.90
Wounds and Accidents	81	92	92	93	81	70	99	61	80	71	82	64	927	11.79	...
All other Causes	122	89	112	125	86	84	116	95	101	122	86	95	1,254	15.46	...
	1,019	744	812	1,113	922	813	1,250	1,097	1,180	1,295	906	929	12,140		
Admitted per cent. of the Average Strength in each Month.															
	11.33	9.23	9.65	13.06	11.09	10.16	15.66	13.31	14.19	16.17	12.60	12.66	149.80		

NATIVE TROOPS, 1867.

III.

TABLE showing the SICKNESS and MORTALITY among the NATIVE TROOPS serving in the DINAPORE, BENARES, OUDE, and CAWNPORE DISTRICTS during the Year 1867, and the prevalence of the principal Diseases in each Month of the Year.

MONTHS.	Average Strength.	Average number daily sick.	Number daily sick per cent. of Strength.	Number of Deaths.	Died per 1000 of Strength.	CAUSES OF DEATHS IN HOSPITAL.																	Died out of Hospital.		
						Cholera.	Smallpox.	Fever, Intermittent.	Fever, Remittent.	Fever, Continued.	Apoplexy.	Dysentery.	Diarrhoea.	Hepatitis.	Spleen Disease.	Respiratory Diseases.	Heart Diseases.	Phthisis Pulmonalis.	Dropsy.	Scurvy.	Atrophy and Anæmia.	Wounds and Accidents.		All other Causes.	
January	7,340	302	4.11	2	...	...	...	...	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...
February	7,416	303	4.09	3	...	...	...	1	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...
March	7,310	364	4.98	6	...	1	...	2	1	...	...	3	...	...	1	...	...	...	...	...	...	...	...	1
April	7,310	319	4.38	9	...	...	1	...	2	...	1	...	...	1	...	...	...	...	...	...	1	...	...	...
May	6,998	275	3.93	7	...	1	1	1	1	1	...	...	...	1	...	...	...	...	...	...	...	...	1	...
June	7,016	286	4.08	7	...	3	...	1	1	...	...	...	...	...	...	...	1	...	...	...	...	...	1	...
July	7,184	324	4.51	4	...	2	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...
August	7,258	323	4.44	18	...	11	...	2	1	...	...	...	...	...	...	...	...	...	...	...	...	...	2	1
September	7,335	347	4.73	5	...	1	...	...	...	...	...	...	...	...	1	...	...	1	1	...	...	...	...	1
October	7,176	386	5.38	6	...	...	...	2	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1	...
November	7,466	373	5.00	4	...	...	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	1	1	...
December	7,571	307	4.05	6	...	...	...	1	1	...	1	...	...	...	1	1	...	1	...	...	...	...	...	...
						20	2	11	10	1	4	4	...	1	3	2	...	2	3	...	1	3	6	3	
Died per 1000 of the Average Strength.																									
For the year	7,330	326	4.45	76	10.37	2.73	.27		3.00		.55	.55	...	.14	.41	.27	...	.27	.41	...	.14	.41	.61	.41

CAUSES OF ADMISSIONS.	NUMBER OF ADMISSIONS INTO HOSPITAL IN EACH MONTH.												Total admitted during the Year.	Admitted per cent. of Strength.	Died per cent. of Admissions.
	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.			
Cholera	...	...	2	...	1	3	5	13	2	2	...	...	23	.38	71.43
Smallpox	...	1	...	...	2	...	...	...	...	...	...	...	11	.15	18.18
Fever, Intermittent	208	178	201	209	185	247	382	323	459	760	485	331	3,908	54.13	
" Remittent	...	...	...	...	...	...	...	...	...	...	...	...	...	...
" Continued	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Apoplexy	...	...	...	1	...	...	...	...	...	...	...	1	2	.03	...
Dysentery	14	20	41	43	29	29	27	35	41	47	46	31	405	5.53	
Diarrhoea	14	12	54	41	18	31	31	40	20	23	11	14	309	4.22	
Hepatitis	1	1	...	2	2	...	1	...	2	...	...	1	10	.14	10.00
Spleen Disease	4	2	2	6	5	4	2	1	3	3	4	2	39	.53	7.89
Respiratory Diseases	23	24	24	12	7	8	20	6	11	15	19	26	195	2.66	1.03
Phthisis Pulmonalis	...	...	...	3	...	...	...	...	1	...	...	1	4	.05	50.00
Dropsy	...	3	...	...	2	...	1	...	1	...	...	...	8	.11	37.50
Scurvy	...	...	...	1	1	...	...	...	...	...	...	...	2	.03	...
Rheumatism	55	51	28	38	29	43	53	28	28	44	31	39	468	6.36	
Veneral Diseases	61	45	48	47	25	30	41	15	25	25	29	30	410	5.69	
Eye Diseases	10	8	17	21	16	13	27	19	19	14	14	6	186	2.54	
Abscess and Ulcer	86	74	54	74	49	70	118	79	64	101	65	81	816	12.47	
Wounds and Accidents	128	107	93	95	91	92	114	107	88	121	130	91	1,257	17.15	
All other Causes	61	75	103	62	46	42	91	64	96	75	68	70	823	11.23	
	662	607	676	664	518	625	931	739	637	1,247	906	728	9,131		
Admitted per cent. of the Average Strength in each Month.															
	9.02	8.19	9.55	9.11	7.40	8.91	12.82	10.17	11.41	17.38	12.16	9.62	124.57		

NATIVE TROOPS, 1867.

IV.

TABLE showing the SICKNESS and MORTALITY among the NATIVE TROOPS serving in the MEEBUT DISTRICT and in ROHILCUND during the Year 1867, and the prevalence of the principal Diseases in each Month of the Year.

MONTHS.	Average Strength.	Average number daily sick.	Number daily sick per cent. of Strength.	Number of Deaths.	Died per 1000 of Strength.	CAUSES OF DEATHS IN HOSPITAL.																	Died out of Hospital.	
						Cholera.	Smallpox.	Fever, Intermittent.	Fever, Remittent.	Fever, Continued.	Apoplexy.	Dysentery.	Diarrhoea.	Hepatitis.	Spleen Disease.	Respiratory Diseases.	Heart Disease.	Phthisis Pulmonalis.	Dropsy.	Scoury.	Atrophy and Anæmia.	Wounds and Accidents.		All other Causes.
January	5,065	143	2.82	3	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	1	...
February	4,922	144	2.93	5	...	...	...	...	...	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...
March	4,954	180	3.63	3	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...
April	4,487	131	2.99	8	...	5	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
May	4,586	145	3.18	5	...	3	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
June	4,432	141	3.21	7	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
July	4,605	143	3.11	3	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
August	4,659	173	3.69	4	...	2	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...
September	4,737	247	5.21	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
October	4,850	225	4.64	8	...	...	...	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...
November	4,881	158	3.19	5	...	...	...	3	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...
December	4,670	139	2.96	4	...	...	...	1	...	...	...	...	1	...	...	...	...	...	...	...	...	1	...	...
						12	3	8	...	2	...	1	2	3	...	8	3	3	...	...	4	...	2	...
Died per 1000 of the Average Strength.																								
For the year	4,742	169	3.55	51	10.75	2.53	.63	2.11	...	...	.21	.42	.63	...	1.69	.63	.63	...	...	.85	...	...	.42	...

CAUSES OF ADMISSIONS.	NUMBER OF ADMISSIONS INTO HOSPITAL IN EACH MONTH.												Total admitted during the Year.	Admitted per cent. of Strength.	Died per cent. of Admissions.
	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.			
			
Cholera	...	...	...	9	1	1	1	3	...	...	...	...	15	.31	80.00
Smallpox	...	...	...	3	2	1	...	...	...	...	...	...	9	.19	33.33
Fever, Intermittent	88	69	76	149	91	69	113	168	484	405	144	112	1,946	41.04	}
" Remittent	...	...	...	...	...	...	...	...	...	...	...	...	...	...
" Continued	4	9	13	8	8	3	6	8	37	16	8	6	128	2.66	.49
Apoplexy	...	...	...	...	...	...	...	...	...	...	...	...	...	...	}
Dysentery	11	5	8	11	25	19	15	15	28	39	29	22	227	4.79	
Diarrhoea	10	9	5	29	32	18	29	33	22	17	25	17	246	5.19	}
Hepatitis	2	1	...	1	...	1	1	2	1	...	...	1	10	.21	
Spleen Disease	1	2	1	1	...	1	2	2	...	1	6	2	19	.40	...
Respiratory Diseases	29	15	9	12	15	22	29	20	24	36	24	25	280	5.48	3.08
Phthisis Pulmonalis	...	...	...	...	1	...	1	1	2	1	...	...	6	.13	60.00
Dropsy	1	...	...	...	1	...	...	...	...	1	...	...	3	.06	...
Scurvy	1	...	...	...	...	2	3	3	1	1	...	...	11	.23	...
Rheumatism	26	32	23	32	23	22	34	22	32	27	31	35	339	7.15	}
Veneral Diseases	33	13	20	21	18	24	21	17	17	29	18	12	243	5.13	
Eye Diseases	9	6	7	15	11	8	19	10	8	16	6	7	122	2.67	}
Abscess and Ulcer	51	44	30	29	41	46	60	64	47	38	29	23	511	10.78	
Wounds and Accidents	26	34	29	37	50	41	48	63	63	36	22	32	471	9.93	}
All other Causes	64	39	60	58	72	63	86	62	90	75	39	29	737	15.54	
	356	279	281	415	391	341	477	481	836	738	381	325	5,301		
Admitted per cent. of the Average Strength in each Month.															
	7.03	5.67	5.67	9.23	8.56	7.61	10.36	10.32	17.65	15.23	7.79	6.96	111.78		

NATIVE TROOPS, 1867.

V.

TABLE showing the SICKNESS and MORTALITY among the NATIVE TROOPS serving in the AGRA DISTRICT and in CENTRAL INDIA during the Year 1867, and the prevalence of the principal Diseases in each Month of the Year.

MONTHS.	Average Strength.	Average number daily sick.	Number daily sick per cent. of Strength.	Number of Deaths.	Died per 1000 of Strength.	CAUSES OF DEATHS IN HOSPITAL.																		Died out of Hospital.	
						Cholera.	Smallpox.	Fever, Intermittent.	Fever, Remittent.	Fever, Continued.	Apoplexy.	Dysentery.	Diarrhoea.	Hepatitis.	Spleen Disease.	Respiratory Diseases.	Heart Disease.	Phthisis Pulmonalis.	Dropsy.	Scurvy.	Atrophy and Anæmia.	Wounds and Accidents.	All other Causes.		
January	5,351	281	5.25	2	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...
February	5,959	308	5.17	2	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...
March	5,969	261	4.39	2	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...
April	5,999	239	4.31	4	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...
May	5,468	237	4.33	6	...	1	...	3	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...	...
June	5,433	215	3.96	3	...	...	...	...	...	...	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...
July	5,416	205	3.79	6	...	3	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1	...	...
August	5,410	228	4.21	2	...	...	...	...	...	...	1	...	...	...	...	...	...	1	...	...	...	...	...	...	...
September	5,462	280	5.13	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
October	5,400	393	6.93	4	...	...	...	...	1	...	...	1	...	1	...	...	...	...	...	...	...	1	...	...	...
November	5,264	305	5.79	2	...	...	...	...	...	...	1	...	1	...	...	...	...	...	...	...	...	...	1	...	...
December	5,095	260	5.10	5	...	...	...	1	1	...	...	2	...	...	...	...	...	...	...	...	...	...	1	...	...
						5	...	9	2	...	2	3	5	1	...	1	...	1	...	...	1	2	4	2	...
Died per 1000 of the Average Strength.																									
For the year	5,488	267	4.87	38	6.93	.91	...	2.00	...	...	.37	.55	.91	.18	...	.19	...	...	...	.18	.37	.73	.37	...	...

CAUSES OF ADMISSIONS.	NUMBER OF ADMISSIONS INTO HOSPITAL IN EACH MONTH.												Total admitted during the Year.	Admitted per cent. of Strength.	Died per cent. of Admissions.
	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.			
			
Cholera	...	...	...	1	2	1	6	...	1	...	...	...	11	.20	45.45
Smallpox	...	...	4	1	...	...	...	...	...	...	...	...	5	.09	...
Fever, Intermittent	259	207	204	429	267	101	234	244	506	907	442	275	4,194	76.42	...
" Remittent	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
" Continued	5	11	...	3	6	3	4	3	29	34	2	1	101	1.84	.26
Apoplexy	...	...	...	...	...	1	...	1	...	1	...	...	3	.06	66.67
Dysentery	15	23	15	26	18	12	29	52	25	23	16	12	268	4.83	...
Diarrhoea	38	15	21	18	15	31	44	28	15	30	22	23	299	5.45	1.42
Hepatitis	...	...	3	...	...	...	...	1	...	2	2	1	9	.16	11.11
Spleen Disease	9	15	12	...	2	2	...	...	1	22	11	5	61	1.47	...
Respiratory Diseases	23	24	13	7	4	5	9	6	3	9	12	10	125	2.29	.80
Phthisis Pulmonalis	...	...	...	...	...	...	...	...	1	...	...	...	1	.02	100.00
Dropsy	...	1	...	...	...	...	...	...	...	...	1	...	3	.04	...
Rheumatism	60	39	18	33	23	16	33	22	10	28	19	32	342	6.23	...
Veneral Diseases	25	29	32	42	28	17	18	18	21	36	27	22	315	5.74	...
Eye Diseases	6	13	3	19	8	8	12	10	16	9	5	6	114	2.08	...
Abscess and Ulcer	87	81	82	59	47	46	105	80	76	78	78	63	882	16.07	.29
Wounds and Accidents	70	78	61	47	47	47	70	59	63	94	86	59	790	14.21	...
All other Causes	67	64	62	56	34	36	56	43	53	53	50	56	630	11.48	...
													8,160		
Admitted per cent. of the Average Strength in each Month.															
													148.69		

NATIVE TROOPS, 1867.

VI.

TABLE showing the SICKNESS and MORTALITY among the NATIVE TROOPS serving in the PUNJAB during the Year 1867, and the prevalence of the principal Diseases in each Month of the Year.

MONTHS.	Average Strength.	Average number daily sick.	Number daily sick per cent. of Strength.	Number of Deaths.	Died per 1000 of Strength.	CAUSES OF DEATHS IN HOSPITAL.																		Died out of Hospital.	
						Cholera.	Smallpox.	Fever, Intermittent.	Fever, Remittent.	Fever, Continued.	Apoplexy.	Dysentery.	Diarrhoea.	Hepatitis.	Spleen Disease.	Respiratory Diseases.	Heart Disease.	Phthisis Pulmonalis.	Dropsy.	Scurvy.	Atrophy and Anemia.	Wounds and Accidents.	All other Causes.		
January	13,066	428	3.23	14	...	...	...	3	...	3	...	1	...	...	1	3	1	...	...	...	...	1	1	...	
February	13,203	427	3.22	11	...	...	1	3	...	...	...	...	1	...	...	3	...	1	...	...	...	...	1	1	...
March	13,107	393	2.98	6	...	...	...	3	...	...	...	...	1	...	...	1	...	...	...	...	1	...	...	...	...
April	12,698	338	2.66	8	...	2	...	1	1	...	...	...	...	...	...	2	...	...	...	...	...	...	1	...	...
May	12,109	308	2.54	21	...	13	...	1	...	1	...	...	1	1	...	3	...	...	...	...	...	...	...	...	...
June	12,103	347	2.87	24	...	...	...	...	...	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...
July	11,931	382	3.20	17	...	9	...	...	...	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...
August	11,982	375	3.13	6	...	1	...	1	...	...	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...
September	11,842	737	6.22	7	...	2	...	1	...	...	1	1	1	...	1	...	...	...	...	...	...	...	...	...	...
October	11,225	1,107	9.86	17	...	1	...	5	...	1	1	5	...	...	...	...	...	...	...	...	...	1	1	...	...
November	11,979	1,188	9.92	19	...	...	...	7	...	...	...	1	4	...	...	...	...	...	...	...	...	...	...	...	...
December	12,538	674	5.38	20	...	...	...	6	...	...	...	4	2	...	...	5	...	...	...	...	...	...	...	...	...
						48	1	31	1	5	3	14	12	1	1	18	2	12	...	...	4	6	10	1	...
Died per 1000 of the Average Strength.																									
For the year	12,328	559	4.53	170	13.75	3.89	.08	3.00			.24	1.13	.97	.08	.08	1.46	.16	.97	...	...	.32	.48	.81	.08	...

CAUSES OF ADMISSIONS.	NUMBER OF ADMISSIONS INTO HOSPITAL IN EACH MONTH.												Total admitted during the Year.	Admitted per cent. of Strength.	Died per cent. of Admissions.
	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.			
Cholera	...	...	...	4	29	47	20	2	3	...	...	...	105	.85	45.71
Smallpox	...	...	...	...	...	...	...	...	...	...	...	...	6	.05	10.67
Fever, Intermittent	463	330	303	355	329	507	667	629	2,445	4,040	1,814	768	12,649	102.60	...
" Remittent	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
" Continued	10	2	3	10	9	8	2	4	7	8	1	1	60	.49	.29
Apoplexy	...	1	...	...	...	5	1	...	1	1	...	...	9	.07	33.33
Dysentery	40	81	24	84	33	52	57	71	115	134	111	97	849	6.99	...
Diarrhoea	53	28	35	39	56	110	113	45	36	60	61	41	657	5.33	1.73
Hepatitis	3	3	4	1	3	1	2	3	1	2	1	2	26	.21	3.85
Spleen Disease	7	6	5	2	2	7	4	2	11	10	9	11	76	.62	1.32
Respiratory Diseases	61	86	43	36	13	15	17	21	18	12	34	59	414	3.36	4.35
Phthisis Pulmonalis	2	3	2	4	1	3	3	2	1	5	2	2	30	.24	40.00
Scurvy	...	3	1	2	1	3	1	...	...	...	3	1	15	.12	...
Rheumatism	101	65	63	68	49	53	59	47	49	65	70	71	759	6.16	...
Veneral Diseases	47	25	25	31	27	27	32	14	17	24	16	19	305	2.47	...
Eye Diseases	22	15	23	31	48	28	42	46	49	62	33	16	415	3.37	...
Abscess and Ulcer	123	93	90	111	86	82	163	156	128	117	89	119	1,357	11.01	...
Wounds and Accidents	180	129	108	144	116	117	151	97	103	132	113	109	1,449	11.75	...
All other Causes	62	81	85	119	97	91	142	84	88	96	62	76	1,103	8.96	...
	1,124	905	814	1,041	899	1,156	1,475	1,322	3,072	4,763	2,421	1,392	20,294		
Admitted per cent. of the Average Strength in each Month.															
	8.80	6.82	6.17	8.20	7.42	9.55	12.36	10.20	25.94	42.43	20.21	11.90	164.54		

NATIVE TROOPS, 1867.

VII.

COMPARATIVE STATEMENT of the RATIOS of SICKNESS and MORTALITY among the NATIVE TROOPS serving in the various PROVINCES of the BENGAL PRESIDENCY, for the Year 1867.

(This Statement is for the men of the Regular Army only, and for the Strength represented in Tables I to VI.)

DISEASES.	BENGAL PROPER AND ASSAM.			DINAPORE, BENARES, OUDE AND CANNPORE DISTRICTS.			MEERUT AND ROHILCUND.			AGRA AND CENTRAL INDIA.			PUNJAB.			BENGAL PRESIDENCY.		
	Average Strength	Daily Sick per cent. of Strength	Admitted per cent. of Strength	Average Strength	Daily Sick per cent. of Strength	Admitted per cent. of Strength	Average Strength	Daily Sick per cent. of Strength	Admitted per cent. of Strength	Average Strength	Daily Sick per cent. of Strength	Admitted per cent. of Strength	Average Strength	Daily Sick per cent. of Strength	Admitted per cent. of Strength	Average Strength	Daily Sick per cent. of Strength	Admitted per cent. of Strength
Cholera	100	45.08	1.00	71.13	1.71	38	31	40.00	29	45.15	31	35	43.71	3.50	82	39,114	3.17	82
Smallpox	95	...	...	18.18	...	15	19	33.33	09	...	...	05	16.67	...	09	17,114	1.15	09
Fever, Intermittent	62.75	...	...	34.13	...	34.13	41.04	...	76.32	...	...	102.00	...	...	73.07	...	...	73.07
Fever, Remittent and Continued	1.13	...	...	1.28	...	1.28	2.66	...	1.81	...	...	4.9	...	...	1.33	...	...	1.33
Apoplexy	01	...	...	03	...	03	...	...	08	...	...	07	...	...	04	...	...	04
Dysentery	16.16	...	...	5.53	...	5.53	4.79	...	4.55	...	...	6.89	...	...	6.05	...	...	6.05
Diarrhoea	9.08	...	...	1.22	...	1.22	6.19	...	6.15	...	...	6.33	...	...	6.08	...	...	6.08
Hepatitis	22	...	...	11	...	11	21	...	10	...	...	21	...	...	18	...	...	18
Spleen Disease	1.21	...	...	52	...	52	10	...	1.37	...	...	62	...	...	83	...	...	83
Respiratory Diseases	4.37	...	...	2.86	...	2.86	5.18	...	2.25	...	...	3.86	...	...	3.57	...	...	3.57
Phthisis Pulmonalis	11	...	...	05	...	05	13	...	02	...	...	24	...	...	13	...	...	13
Dropsy	12	...	...	11	...	11	06	...	04	...	...	...	...	...	06	...	...	06
Scurvy	46	...	...	03	...	03	23	...	...	...	...	12	...	...	17	...	...	17
Rheumatism	6.11	...	...	6.98	...	6.98	7.15	...	6.23	...	...	6.16	...	...	6.34	...	...	6.34
Veneral Diseases	5.82	...	...	5.50	...	5.50	5.12	...	5.71	...	...	2.47	...	...	4.55	...	...	4.55
Eye Diseases	1.43	...	...	2.61	...	2.61	2.37	...	2.08	...	...	3.37	...	...	2.47	...	...	2.47
Abscess and Ulcer	11.45	...	...	12.17	...	12.17	10.78	...	16.07	...	...	11.01	...	...	12.15	...	...	12.15
Wounds and Accidents	11.70	...	...	17.15	...	17.15	9.93	...	11.21	...	...	11.75	...	...	13.10	...	...	13.10
All other Causes	15.45	...	...	11.23	...	11.23	15.51	...	11.46	...	...	8.95	...	...	11.91	...	...	11.91
	119.6	...	...	121.57	...	121.57	111.78	...	118.69	...	...	161.54	...	...	144.77	...	...	144.77

NATIVE TROOPS, 1867.

VIII.

TABLE showing the SICKNESS and MORTALITY among the NATIVE TROOPS composing the CENTRAL INDIA IRREGULAR FORCE during the Year 1867, and the prevalence of the principal Diseases in each Month of the Year.

MONTHS.	Average Strength.	Average number daily sick.	Number daily sick per cent. of Strength.	Number of Deaths.	Died per 1000 of Strength.	CAUSES OF DEATHS AT HEAD-QUARTERS.																		
						Cholera.	Smallpox.	Fever, Intermittent.	Fever, Remittent.	Fever, Continued.	Apoplexy.	Dysentery.	Diarrhoea.	Hepatitis.	Spleen Disease.	Respiratory Diseases.	Heart Diseases.	Phthisis Pulmonalis.	Dropsy.	Scurvy.	Atrophy and Anæmia.	Wounds and Accidents.	All other Causes.	
January ...	4,014	124	3.09	5	...	...	...	1	2	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1
February ...	3,926	136	3.46	2	...	...	...	...	...	...	...	...	1	...	...	1	...	...	...	...	...	...	...	...
March ...	3,991	134	3.36	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...
April ...	4,143	110	2.87	4	...	...	...	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1
May ...	4,367	129	2.95	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
June ...	4,123	143	3.47	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
July ...	4,206	150	3.52	3	...	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
August ...	4,278	150	3.51	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...
September ...	4,391	187	4.26	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
October ...	4,377	191	4.36	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...
November ...	4,336	189	4.36	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...
December ...	4,336	150	3.46	3	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...
						3	...	4	2	...	...	1	1	1	...	7	...	1	...	...	...	1	2	
Died per 1000 of the Average Strength.																								
For the year ...	4,212	150	3.56	23	5.46*	71	...	1.42	...	...	24	24	24	...	1.06	...	24	...	...	...	...	24	...	47

CAUSES OF ADMISSIONS.	NUMBER OF ADMISSIONS INTO HOSPITAL IN EACH MONTH.												Total admitted during the Year.	Admitted per cent. of Strength.	Died per cent. of Admissions.
	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.			
Cholera ...	...	...	...	...	...	...	20	...	...	...	...	...	20	.47	15.00
Smallpox ...	...	...	3	...	1	...	...	...	...	...	...	...	4	.10	...
Fever, Intermittent ...	119	107	105	139	116	103	93	134	180	369	219	116	1,799	42.71	...
" Remittent ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
" Continued ...	3	4	2	3	5	2	1	1	2	1	2	1	27	.64	.33
Apoplexy ...	...	...	1	...	...	...	...	...	...	...	...	...	1	.02	...
Dysentery ...	6	7	12	9	7	22	20	26	10	16	9	6	150	3.56	...
Diarrhoea ...	8	4	5	14	8	7	32	27	23	11	6	7	152	3.61	.66
Hepatitis ...	1	1	1	2	2	1	...	1	1	...	...	1	12	.28	8.33
Spleen Disease ...	...	...	...	1	1	...	...	...	...	...	...	...	3	.07	...
Respiratory Diseases ...	18	16	12	8	7	6	8	10	3	8	9	13	118	2.80	5.93
Phthisis Pulmonalis ...	...	...	...	...	...	...	...	...	...	1	...	1	2	.05	50.00
Dropsy ...	...	1	...	...	...	...	1	...	...	...	...	...	2	.05	...
Scurvy ...	...	...	...	...	...	...	...	1	...	...	1	1	3	.07	...
Rheumatism ...	15	12	24	20	10	13	10	19	12	14	21	23	193	4.59	...
Veneral Diseases ...	20	19	16	16	22	16	27	11	17	22	11	17	214	5.08	...
Eye Diseases ...	12	13	18	28	19	18	18	20	27	30	19	10	229	5.37	...
Abscess and Ulcer ...	39	20	21	17	24	31	39	25	29	33	39	35	347	8.24	.13
Wounds and Accidents ...	42	41	43	32	29	44	32	30	55	67	49	63	507	12.04	...
All other Causes ...	53	57	58	76	60	77	99	86	69	75	68	40	628	19.66	...
													4,608		
Admitted per cent. of the Average Strength in each Month.															
													109.40		

* The Death-rate for the full Strength of the Central India Irregular Force is 8.92 per 1,000, the equivalent of 43 deaths in a Strength of 4,820.
Strength borne on the rolls on 1st January 1867 ... 4,816
Additions received during the year ... 414

Total ... 5,230
Deaths at Head-Quarters, 22; on Detachment, 14; on Furlough, 7 ... 404
Invalided for discharge, 42; otherwise discharged, 319 ... 4,826
Remaining on the rolls of the Regiments on 31st December ... 4,826

NATIVE TROOPS, 1867.

IX.

TABLE showing the SICKNESS and MORTALITY among the NATIVE TROOPS composing the PUNJAB IRREGULAR FORCE during the Year 1867, and the prevalence of the principal Diseases in each Month of the Year.

MONTHS.	CAUSES OF DEATHS AT HEAD QUARTERS.																						
	Average Strength.	Average number daily sick.	Number daily sick per cent. of Strength.	Number of Deaths.	Died per 1000 of Strength.	Cholera.	Smallpox.	Fever, Intermittent.	Fever, Remittent.	Fever, Continued.	Apoplexy.	Dysentery.	Diarrhoea.	Hepatitis.	Spleen Disease.	Respiratory Diseases.	Heart Diseases.	Phthisis Pulmonalis.	Dropsy.	Scurvy.	Atrophy and Anæmia.	Wounds and Accidents.	All other Causes.
January	10,579	386	3.65	11	...	...	...	2	2	...	1	...	...	...	...	4	1	1	...	...	...	1	1
February	10,921	349	3.23	7	...	...	...	...	3	...	...	...	...	...	1	1	1	...	...	...	...	...	...
March	10,794	301	2.80	6	...	...	...	1	2	...	...	...	1	...	...	2	...	...	...	...	...	...	...
April	9,116	204	2.28	3	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
May	8,345	199	2.40	3	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	1	...	1
June	8,237	229	2.78	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...
July	8,006	216	2.70	13	...	6	...	...	2	...	2	...	...	...	...	1	...	...	...	...	...	...	...
August	8,228	258	3.14	25	...	20	...	1	...	2	...	...	...	...	...	1	...	1	...	...	...	...	...
September	8,355	354	4.24	9	...	8	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...
October	8,007	455	5.69	9	...	3	...	...	2	1	...	...	...	...	...	2	...	...	...	...	...	...	1
November	8,817	578	6.56	11	...	...	2	...	2	...	...	2	...	...	...	2	...	2	...	...	...	...	1
December	10,409	546	5.25	15	...	...	2	5	...	...	...	4	...	...	...	2	...	...	...	...	...	1	1
						39	4	10	14	4	3	6	1	...	1	17	1	5	...	...	1	2	5
Died per 100 of the Average Strength.																							
For the year	9,135	332	3.64	113	12.37*	4.27	44	...	3.07	33	60	11	...	11	1.56	11	54	...	...	11	23	54	...

CAUSES OF ADMISSIONS.	NUMBER OF ADMISSIONS INTO HOSPITAL IN EACH MONTH.												Total admitted during the Year.	Admitted per cent. of Strength.	Died per cent. of Admissions.
	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.			
Cholera	...	...	...	...	...	2	24	39	15	6	...	...	86	94	45.35
Smallpox	3	2	1	...	...	...	...	...	...	...	2	...	14	15	28.57
Fever, Intermittent	397	242	203	214	177	334	376	341	613	1,813	1,511	710	7,121	77.95	14
Remittent	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Continued	7	11	15	9	7	5	8	11	5	6	5	11	100	1.10	18.00
Apoplexy	1	...	...	...	...	...	2	...	...	...	...	...	4	0.4	75.00
Dysentery	25	16	13	24	24	24	31	39	49	70	62	37	414	4.53	...
Diarrhoea	28	16	8	29	26	44	54	41	38	21	23	35	360	3.94	...
Hepatitis	...	3	1	1	1	...	...	2	...	...	...	...	8	0.9	...
Spleen Disease	6	4	3	4	2	2	4	1	...	...	17	17	60	0.6	...
Respiratory Diseases	70	70	61	43	18	5	11	14	15	20	34	45	406	4.45	4.19
Phthisis Pulmonalis	1	2	...	2	2	...	...	...	2	1	2	...	12	0.13	41.87
Dropsy	...	...	...	...	...	...	1	1	...	...	...	2	4	0.4	...
Scurvy	4	1	...	...	...	...	2	...	...	1	1	2	11	0.12	...
Rheumatism...	57	43	57	33	26	22	27	28	22	35	32	43	426	4.66	...
Venereal Diseases	25	23	28	21	28	23	18	21	15	14	15	15	246	2.69	...
Eye Diseases	18	8	8	27	27	29	41	17	32	33	19	18	277	3.03	...
Abscess and Ulcer	178	84	70	70	61	53	128	112	138	111	93	129	1,227	13.43	22
Wounds and Accidents	96	79	98	121	86	88	93	55	80	95	100	81	1,072	11.71	...
All other Causes	71	59	80	95	64	67	107	89	84	67	59	61	902	9.89	...
	975	663	646	601	549	698	927	811	1,308	2,294	1,074	1,214	12,750		
Admitted per cent. of the Average Strength in each Month.															
	9.22	6.13	6.00	7.58	6.06	8.47	11.57	9.56	15.06	28.65	22.39	11.68	139.67		

* The Death-rate for the full Strength of this Force is 15.50 per 1,000, the equivalent of 189 deaths in a Strength slightly exceeding 12,000. The following is a Statement of the Gain and Loss of the Frontier Force during the year :-

Strength borne on the Regimental Rolls on 1st January 1867	11,967
Additions received during the year	1,679
Total	13,546
Deaths at Head Quarters and on Detachment, 139; died on Furlough and Sick-leave, 60	1,133
Invalids for discharge, 168; and discharged otherwise, 776	...
Remaining on the rolls at the close of 1867	12,413

NATIVE TROOPS, 1867.

XII.

TABLE showing the prevalence of SMALLPOX and CHOLERA in each month, and the distribution of these Epidemics by STATIONS and PROVINCES.

[illegible]

TABLE XII.—(Continued.)

STATIONS.	Average Strength for the period of Observation.	SMALLPOX.												CHOLERA.												Died per 1,000 of Average Strength.						
		NUMBER OF ADMISSIONS INTO HOSPITAL IN EACH MONTH.												Total Admissions of the Year.	Deaths of the Year.	Died per 1,000 of Average Strength.	NUMBER OF ADMISSIONS INTO HOSPITAL IN EACH MONTH.												Total Admissions of the Year.	Deaths of the Year.	Died per 1,000 of Average Strength.	
		Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.				Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.		Oct.	Nov.				Dec.
Mean Meer Rawalpindes Attock Peshawar Troops on the march, (Punjab) ...	1324 1503 148 4,895 ...	...	1	...	...	...	...	...	...	...	...	1	2	...	...	...	1	...	...	11	1	...	...	...	...	...	13	5	...
Troops on the march, Ben- gal and N. W. Provinces	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	...	...	...	...	...	...	...	...	...	...	...	...	...
Bengal Presidency ...	39,114	1	10	6	8	5	1	1	...	...	...	...	3	35	6	...	...	...	...	41	20	9	9	8	16	244	124	317	...
Central India Force ...	4,212	...	...	3	...	1	...	...	...	...	...	...	...	4	...	...	...	...	...	20	...	...	...	...	...	20	3	71	...
Punjab Frontier Force ...	9,135	3	2	1	...	...	...	...	...	...	...	...	2	6	4	...	...	...	...	34	39	15	6	...	...	86	39	426	...

NATIVE TROOPS, 1867.

XIII.

STATEMENT showing the GAIN and LOSS in Strength of the REGULAR ARMY of BENGAL during 1867.

Present with their Regiments on 1st January 1867...	43,415	Permanent Loss of the Year.	
At their homes on furlough	650	Deaths at Head-Quarters	463
At their homes on sick leave	525	Deaths at Outposts and in Detachments	94
Remaining sick in the Hospitals of other Regiments	12	Deaths while at home on furlough	75
		Deaths while at home on sick leave	131
Total Strength on 1st January 1867...	44,602	Total Deaths	763
Additions of the Year.		Invalidated for Discharge	779
Transfers received from other Regiments	83	Transfers given to other Regiments	239
Recruits received during the year	6,277	Discharged for other reasons, struck off for bad conduct, desertion, &c.	2,868
Deserters rejoined	13		
Total Gain ...	6,373	Total Loss	4,649
		Remaining on the Regimental Rolls on 31st December 1867 ...	46,326

Details have not been received from the 12th Cavalry, and 21st N. Infantry, attached to the Abyssinian Expeditionary Force.

ABSTRACT of the Returns showing the ADMISSIONS, DEATHS,

1.—REGIMENTS of BENGAL

REGIMENT AND STATION OF 1867.	Date of Arrival from Station previously occupied.	Average Strength during 1867.	Admission of 1st per cent. of the Average Strength.	INVALIDED		DIED		LOSS PER 1,000	
				To their homes for change of air.	For Discharge.	With the Regiment.	Absent from the Regiment.	By invaliding for Discharge.	By Death.
1 2nd Native Infantry, Alipore ...	November 1866, from Lucknow ...	640	128	53	14	16	8	21.98	30.8
2 26th Native Infantry, Alipore ...	April 1866, from Goruckpore* ...	609	120	43	8	10	5	17.44	27.6
3 9th Native Infantry, Fort William ...	April 1866, from Fyzabad* ...	674	100	41	47	16	9	69.73	37.66
4 1st Native Infantry, Dum-Dum ...	March 1867, from Morar ...	698	97	17	32	27	3	47.84	42.1
5 17th Bengal Cavalry, Barrackpore ...	April 1866, from Segowlie* ...	476	84	14	5	7	6	19.55	27.4
6 17th Native Infantry, Barrackpore ...	May 1866, from Dacca ...	653	81	54	16	8	9	24.15	26.9
7 Detachment 18th Native Infantry, Berhampore ...	...	165	27	...	...	5	...	...	36.3
8 5th Native Infantry, (Head Quarters) Dacca ...	In Eastern Bengal since May 1864.	323	180	23	10	4	6	17.70	...
9 5th Native Infantry, (Wing) Cachar ...		242	107						
10 44th Native Infantry, Shillong ...	A Local Corps ...	891	89	7	7	10	4	28.6	17.1
11 Eurasian Battery, Cheerapoonjee and Shillong ...	...	71	11	1	...	...	1	...	...
12 6th Native Infantry, Julpigoree ...	March 1866, from Bhootan ...	698	101	30	13	7	5	21.77	26.4
13 32nd Native Infantry, Buxa Dooar ...	Left Ferozepore in October 1865*	705	100	3	...	19	4	...	...
14 43rd Native Infantry, (Head Quarters) Tezpur ...	Local Corps	321	...	...	...	10	2	...	...
15 43rd Native Infantry, (Wing) Gowhatty ...		318	...	...	...	...	...	...	...
16 42nd Native Infantry, Upper Assam ...		900	...	10	25	13	4	21.11	17.7
17 Assam M. T. Battery, Debrooghur ...		51	24	4	3	...	4	26.27	13.3
18 18th Native Infantry, Bhaugulpore ...	May 1865, from Julpigoree ...	452	117	40	23	9	9	27.68	...
REGIMENTS OF BENGAL PROPER, BHOOTAN, AND ASSAM ...		8878	1111	340	203	186	77	29.87	...

2.—REGIMENTS of BEHAR, BENGAL

1 11th Native Infantry, Dinapore ...	October 1865, from Bhootan ...	708	112	50	27	12	5	39.11	...
2 8th Bengal Cavalry, Segowlie ...	November 1865, from Seetapore ...	302	105	29	20	1	1	36.42	...
3 14th Native Infantry, Benares ...	February 1865, from Meerut ...	534	154	11	...	5	4	...	10.7
4 37th Native Infantry, Goruckpore ...	November 1865, from Agra ...	623	157	24	...	12	2	...	22.1
5 16th Native Infantry, Fyzabad ...	December 1865, from Dinapore ...	715	81	2	9	3	3	12.69	8.4
6 7th Bengal Cavalry, Lucknow ...	May 1864, from Mooltan ...	458	121	11	26	...	2	56.77	17.7
7 34th Native Infantry, Lucknow ...	February 1867, from Barrackpore ...	683	82	6	4	6	1	35.0	...
8 39th Native Infantry, Lucknow ...	March 1867, from Assam ...	655	119	5	7	10	6	19.55	21.1
9 5th Bengal Cavalry, Seetapore ...	April 1866, from Bhootan ...	450	63	...	11	5	1	24.15	17.1
10 12th Bengal Cavalry, Cawnpore and Jhansi ...	Dec. 1866, from Meerut ...	496	72	†	†	4	†	...	...
11 30th Native Infantry, Cawnpore ...	June 1865, from Bhootan ...	654	85	10	16	5	5	24.16	17.1
12 7th Native Infantry, Allahabad ...	{ Jan. 1865, from Banda and Nowgong. }	721	86	5	6	6	1	36.32	12.4
13 38th Native Infantry, Nagode ...	{ Jan. 1865, from Chittagong and Barrackpore. }	611	153	2	2	4	2	32.7	9.8
14 40th Native Infantry, Nowgong and Banda ...	{ Jan. 1865, from Barrackpore ... }	675	255	51	...	2	7	...	13.3
15 1st Bengal Cavalry, Nowgong and Jubbulpore ...	{ Feb. 1864, from Meerut ... }	468	112	13	12	1	...	25.64	10.66
16 12th Native Infantry, Jubbulpore ...	Jan. 1867, from Dorundah ...	594	160	11	13	2	...	21.88	9.37

IV.

and INVALIDING of each REGIMENT for the Year.

CAUSES OF ADMISSIONS INTO HOSPITAL AND OF DEATHS IN HOSPITAL DURING THE YEAR.

Total Admissions into Hospital, and Deaths in Hospital during the year.		CAUSES OF ADMISSIONS INTO HOSPITAL AND OF DEATHS IN HOSPITAL DURING THE YEAR.																									
		Cholera.	Fever.	Dysentery and Diarrhoea.	Ophthalmia.	Rheumatism.	Veneral Affec- tions.	Scurvy.	Anæmia and De- bility.	Guinea Worm.	Dropsy.	Phthisis Pulmon- alis.	Apoplexy.	Neuralgic Affec- tions.	Heart Disease.	Bronchitis and Asthma.	Pleurisy and Pneumonia.	Spleen Disease.	Hepatitis.	Diseases of the Di- gestive System.	Diseases of the Urinary System.	Diseases of the Ge- nerative System.	Scabies and Skin Diseases.	Abscess and Ulcer.	Injuries.	Punished.	All other Causes.
1	{ Admitted ... 1,462 Died ... 15	25	672	432	5	43	19	10	1	...	11	...	10	2	1	...	10	31	62	114	...	16
2	{ Admitted ... 835 Died ... 10	2	329	164	5	57	68	2	8	...	1	...	8	...	32	...	1	1	23	20	49	54	...	12
3	{ Admitted ... 676 Died ... 16	5	307	162	12	48	33	4	...	9	6	...	38	6	5	1	5	6	21	14	...	4
4	{ Admitted ... 1,667 Died ... 27	23	741	334	2	40	33	...	15	...	7	2	...	37	...	20	16	8	...	40	...	6	36	195	83	2	27
5	{ Admitted ... 393 Died ... 7	1	123	97	2	12	28	2	3	4	...	11	3	2	...	13	25	19	46	...	3
6	{ Admitted ... 554 Died ... 8	...	332	96	2	19	7	1	5	...	...	1	1	...	4	1	7	...	6	...	1	16	10	45	...	10
7	{ Admitted ... 447 Died ... 9	...	269	68	2	21	33	...	1	...	...	...	4	...	5	...	6	1	...	...	6	5	21	15	...	1
8	{ Admitted ... 602 Died ... 1	1	321	90	3	16	23	...	7	1	8	...	8	3	20	...	24	13	20	37	...	7
9	{ Admitted ... 258 Died ... 3	5	117	32	5	14	13	...	...	...	...	...	2	...	12	...	3	1	4	...	3	7	25	11	...	4
10	{ Admitted ... 711 Died ... 10	3	212	89	9	29	43	9	1	...	3	...	8	...	18	3	8	4	17	...	3	35	103	64	...	51	
11	{ Admitted ... 100 Died ... 1	...	25	10	...	11	7	...	1	...	1	...	2	...	4	...	...	2	9	...	...	1	5	18	...	4
12	{ Admitted ... 800 Died ... 7	1	272	76	13	20	25	5	42	...	...	...	15	...	20	2	9	...	17	...	2	92	49	120	...	20
13	{ Admitted ... 708 Died ... 10	1	193	158	8	23	19	7	3	...	1	...	6	3	36	6	...	...	30	1	...	61	69	67	...	12
14	{ Admitted ... 1,079 Died ... 1	8	545	121	12	23	28	...	3	...	1	2	...	15	...	30	1	4	...	14	5	1	68	103	55	...	50
15	{ Admitted ... 1,096 Died ... 1	9	822	210	15	90	29	4	9	...	1	2	1	22	1	42	7	7	2	25	...	1	67	142	131	...	7
16	{ Admitted ... 123 Died ... 1	...	59	14	1	3	...	...	...	...	...	...	1	...	2	...	...	...	3	...	2	2	14	23	...	...
17	{ Admitted ... 576 Died ... 1	...	187	46	14	16	60	...	13	1	...	3	...	2	...	11	2	20	1	7	1	...	28	65	106	...	3
18	{ Admitted ... 12,077 Died ... 1	92	5,621	2,108	110	485	458	34	121	11	13	12	2	152	4	393	52	103	13	297	7	25	503	962	1,002	6	231
RES, OUDE, and CAWNPORE.																											
1	{ Admitted ... 794 Died ... 1	9	301	85	10	31	36	...	...	1	2	...	4	1	12	2	6	1	8	...	2	45	101	131	...	6
2	{ Admitted ... 590 Died ... 1	...	235	44	18	61	14	...	1	...	...	...	6	...	26	2	...	1	25	3	4	26	59	65	...	1
3	{ Admitted ... 824 Died ... 5	3	287	65	19	65	60	...	7	4	1	2	...	11	...	25	2	...	1	33	34	66	111	1	7
4	{ Admitted ... 853 Died ... 12	...	554	47	9	19	49	...	3	...	...	1	6	...	12	5	1	...	2	...	3	40	55	42	...	6
5	{ Admitted ... 361 Died ... 3	...	129	42	8	8	17	...	1	...	3	1	...	8	...	5	3	...	17	...	...	7	64	41	...	4
6	{ Admitted ... 555 Died ... 9	...	135	38	9	46	36	1	...	1	...	...	7	...	10	...	1	2	21	...	1	17	76	148	...	6
7	{ Admitted ... 580 Died ... 6	...	125	52	10	17	36	...	...	...	...	1	8	...	2	1	6	1	13	...	4	179	56	108	...	1
8	{ Admitted ... 790 Died ... 2	4	273	156	18	25	36	1	...	...	1	...	7	2	32	...	2	2	14	1	2	19	64	106	1	15
9	{ Admitted ... 294 Died ... 3	3	99	21	5	15	11	...	7	...	1	...	3	...	5	...	...	...	15	...	...	4	40	53	...	2
10	{ Admitted ... 389 Died ... 4	1	153	30	25	23	10	...	...	...	...	...	3	...	3	...	3	...	4	...	3	3	48	45	...	6
11	{ Admitted ... 558 Died ... 5	...	245	41	20	38	33	1	4	...	1	1	...	5	...	10	2	3	2	23	1	1	8	41	66	...	13
12	{ Admitted ... 618 Died ... 5	8	233	44	16	32	18	...	8	1	1	18	1	12	...	5	...	28	...	2	26	80	79	...	6
13	{ Admitted ... 813 Died ... 4	...	562	20	10	30	42	...	...	1	...	...	4	...	6	8	2	...	3	...	5	8	49	51	...	3
14	{ Admitted ... 1738 Died ... 2	1	946	102	10	60	44	...	...	...	1	1	25	...	23	1	14	1	16	...	2	25	306	254	...	6
15	{ Admitted ... 526 Died ... 1	...	309	25	11	33	6	2	...	1	...	3	...	3	1	2	...	8	...	1	14	32	51	...	5
16	{ Admitted ... 651 Died ... 2	...	436	14	6	24	37	...	3	...	...	...	4	...	11	1	1	2	13	2	1	12	43	31	1	9

TABL

3.—REGIMENTS OF ROHILCUND.

REGIMENT AND STATION OF 1867.	Date of Arrival from Station previously occupied.	Average Strength during 1867.	Admission-rate of 1867 Percent of the Average Strength.	INVALIDED		DIED		LOSS PER 1,000	
				To their homes for change of air.	For Discharge.	With the Regiment.	Absent from the Regiment.	By Invaliding for Discharge.	By Deaths.
1 29th Native Infantry, (Wing) Shahjehanpore.	} April 1866, from Bhootan and Barrackpore. }	258	65	} 8	9	3	} 2	13.96	24.81
2 29th Native Infantry, (Head Quarters) Moradabad.		397	60			11			
3 4th Bengal Cavalry, Bareilly ...	January 1866, from Peshawur ...	457	95	...	12	1	4	26.26	10.93
4 8th Native Infantry, Bareilly ...	April 1864, from Peshawur ...	540	115	5	21	3	2	35.89	17.26
5 Body Guard, Dehra and Calcutta ...	...	130	157	...	3	...	...	23.07	...
6 Sappers and Miners, Roorkee ...	...	600	178	...	13	6	15	15.00	25.00
7 3rd Goorkhas, Almora ...	April 1866, from Bhootan ...	702	108	9	17	7	3	24.22	16.24
8 14th Bengal Cavalry, Meerut ...	December 1866, from Cawnpore ...	457	72	2	5	3	...	10.94	6.57
9 36th Native Infantry, Meerut ...	December 1866, from Alipore ...	651	90	23	1	6	6	1.53	18.13
10 19th Native Infantry, Allyghur ...	March 1866, from Bhootan ...	677	69	3	31	6	4	45.29	14.77
11 25th Native Infantry, Delhi ...	December 1864, from Alipore ...	618	100	11	3	4	7	1.85	17.80
12 41st Native Infantry, Agra ...	October 1865, from Peshawur ...	716	82	6	25	4	2	3.69	1.38
13 16th Bengal Cavalry, Morar ...	January 1865, from Deolee ...	465	115	9	1	3	1	2.15	1.40
14 22nd Native Infantry, Morar ...	June 1866, from Umballa ...	695	110	5	18	6	...	36.28	1.76
15 33rd Native Infantry, Morar... ..	March 1867, from Lucknow ...	710	101	4	...	5	1	...	1.16
16 4th Native Infantry, Jhansi ...	January 1865, from Delhi ...	571	126	...	15	1	1	26.27	2.20
17 2nd Bengal Cavalry, Deolee ...	December 1864, from Umritsur ...	437	105	6	32	6	2	70.12	1.10
18 10th Bengal Cavalry, Saugor ...	November 1865, from Umballa ...	374	162	13	10	1	2	26.73	1.82
19 35th Native Infantry, Saugor ...	December 1866, from Lullutpore...	677	136	5	4	6	3	5.91	17.25
REGIMENTS OF ROHILCUND, MEERUT, AGRA, AND CENTRAL INDIA ...		10,312	113	109	219	81	55	21.14	13.60

4.—REGIMENTS of

1	11th Bengal Cavalry, Umballa	...	February 1866, from Mooltan	...	469	42	24	5	2	1	10 06	6 30
2	31st Native Infantry, Umballa	...	April 1866, from Bhootan	...	608	140	15	14	7	5	23 03	19 74
3	13th Native Infantry, Jullundur	...	March 1867, from Peshawur	...	688	146	8	20	13	4	20 07	23 25
4	15th Native Infantry, Ferozepore	...	January 1866, from Dorundah	...	714	76	...	10	5	2	14 01	0 50
5	15th Bengal Cavalry, Mooltan	...	January 1866, from Jhansi	...	401	99	8	10	3	...	24 01	7 44
6	10th Native Infantry, Mooltan	...	{ May 1866, from Shahjehan- pore and Moradabad. }	...	637	107	4	16	7	2	25 12	14 13
7	6th Bengal Cavalry, Sealkote	...	March 1865, from Umritsur	...	382	55	2	6	...	1	20 04	2 02
8	1st Goorkha, Dhurmsalla	...	March 1867, from Buxa Doar	...	654	113	4	10	17	5	15 29	38 23
9	4th Goorkha, Bukloh †	...	April 1866, from Almorah	...	462	93	3	2	2	2	4 33	8 00
10	9th Bengal Cavalry, Meean Meer	...	December 1866, from Peshawur	...	457	56	12	2	3	3	4 35	13 14
11	3rd Native Infantry, Meean Meer	...	April 1865, from Mooltan	...	545	305	11	7	12	...	12 31	22 02
12	21st Native Infantry, Meean Meer	...	March 1865, from Allahabad	...	627	160	†	†	1	†	†	†
13	18th Bengal Cavalry, Rawalpindoe	...	January 1865, from Lucknow	...	386	149	15	1	7	2	2 58	23 20

MEERUT, AGRA, and CENTRAL INDIA.

Total Admissions into Hospital, and Deaths in Hospital during the year.		CAUSES OF ADMISSIONS INTO HOSPITAL AND OF DEATHS IN HOSPITAL DURING THE YEAR.																									
		Cholera.	Fever.	Dysentery and Diarrhoea.	Ophthalmia.	Rheumatism.	Veneral Affec- tions.	Scurvy.	Anemia and De- bility.	Guinea Worm.	Dropsy.	Phthisis Pulmon- als.	Apoplexy.	Neuralgic Affec- tions.	Heart Disease.	Bronchitis and Asthma.	Pleurisy and Pneumonia.	Spleen Disease.	Hepatitis.	Diseases of the Di- gestive System.	Diseases of the Urinary System.	Diseases of the Ge- nerative System.	Scabies and Skin Diseases.	Abscess and Ulcer.	Injuries.	Punished.	All other Causes.
1	{ Admitted ... 167	5	63	21	1	9	15	...	...	...	1	...	4	...	2	1	...	...	1	...	...	6	24	12	...	3
	{ Died ... 3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
2	{ Admitted ... 266	5	93	30	11	19	16	2	...	...	1	...	1	...	2	2	3	3	6	...	2	6	41	17	...	7
	{ Died ... 11	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
3	{ Admitted ... 433	...	147	30	14	18	7	1	...	2	2	...	9	...	10	...	1	...	13	2	...	17	65	103	...	2	
	{ Died ... 1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
4	{ Admitted ... 617	...	206	61	16	46	27	3	2	...	...	...	13	...	22	9	4	...	43	...	1	16	51	89	...	9
	{ Died ... 3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
5	{ Admitted ... 205	1	92	21	2	2	3	...	...	...	...	...	1	...	2	...	9	1	15	...	1	2	19	33	...	1
	{ Died ... 1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
6	{ Admitted ... 1,414	2	433	128	17	96	24	...	42	...	2	...	62	6	103	50	3	...	182	2	3	34	93	94	5	33	
	{ Died ... 5	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
7	{ Admitted ... 541	1	226	42	7	61	70	1	...	...	2	...	4	...	19	1	3	...	9	...	...	1	60	39	...	6
	{ Died ... 1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
8	{ Admitted ... 335	2	128	28	6	17	24	1	4	3	...	...	9	...	39	2	3	4	6	1	...	13	15	28	...	2
	{ Died ... 1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
9	{ Admitted ... 586	...	262	40	10	19	44	2	12	...	...	...	9	...	2	5	...	2	17	...	1	35	82	36	1	7
	{ Died ... 6	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
10	{ Admitted ... 467	1	199	51	13	25	26	...	1	...	3	...	27	...	9	2	...	...	24	...	2	7	32	35	...	10
	{ Died ... 1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
11	{ Admitted ... 615	1	347	36	8	17	9	...	...	1	...	...	6	...	14	11	3	...	33	2	...	7	84	34	...	2
	{ Died ... 1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
12	{ Admitted ... 587	1	159	63	15	22	52	...	3	3	...	...	19	...	3	1	1	1	3	...	...	80	114	41	...	6
	{ Died ... 1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
13	{ Admitted ... 676	...	407	67	20	28	37	...	7	4	...	...	1	...	19	...	1	1	5	1	4	9	24	40	...	1
	{ Died ... 1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
14	{ Admitted ... 1,019	1	537	70	8	40	43	...	14	2	2	...	13	...	25	7	...	2	29	...	2	15	64	131	...	5	
	{ Died ... 3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
15	{ Admitted ... 932	1	697	33	7	19	17	...	...	2	...	...	2	1	5	1	...	...	2	...	9	34	53	41	...	8
	{ Died ... 1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
16	{ Admitted ... 720	...	330	47	5	19	15	1	2	...	...	...	2	8	5	11	58	...	9	...	...	11	77	110	...	10
	{ Died ... 1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
17	{ Admitted ... 865	6	249	53	21	66	31	...	...	32	...	...	1	11	9	1	...	3	41	...	4	11	135	187	...	4
	{ Died ... 6	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
18	{ Admitted ... 607	...	356	62	7	19	14	...	5	...	...	...	4	...	5	...	8	...	6	6	...	6	56	50	...	3
	{ Died ... 1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
19	{ Admitted ... 1058	...	553	99	3	36	27	...	...	...	...	...	1	...	4	1	5	...	...	...	...	80	173	77	...	...
	{ Died ... 2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	{ Admitted ... 12,110	27	5,482	971	191	587	501	11	92	48	3	11	6	201	6	299	105	102	17	444	14	29	389	1,352	1,197	6	119
	{ Died ... 81	18	19	2	...	3	1	...	6	...	3	3

the PUNJAB.

1	{ Admitted ... Died ...	198 2	...	50 1	18	7	8	12	...	...	4	...	...	1	...	...	1	...	...	11	...	...	...	36	47	...	5	
2	{ Admitted ... Died ...	848 7	6	593 1	34	28	18	14	1	5	19	...	1	...	1	...	7	10	3	2	...	4	1	2	11	59	21	...	10
3	{ Admitted ... Died ...	1,377 12	4	659 3	98	14	50	57	...	13	...	...	2	...	28	...	28	10	6	...	51	6	...	26	88	136	...	9
4	{ Admitted ... Died ...	541 5	5	302 1	23	25	25	5	...	14	1	...	1	...	2	...	9	...	2	...	37	...	2	5	57	24	...	2	
5	{ Admitted ... Died ...	395 3	...	153 1	40	40	18	1	...	...	...	...	...	2	...	5	3	1	...	11	6	...	5	53	36	...	3	
6	{ Admitted ... Died ...	683 7	3	344 2	41	10	35	6	5	2	1	...	2	...	10	1	27	6	1	...	14	2	...	21	103	44	1	3	
7	{ Admitted ... Died ...	361 ...	...	77 ...	11	9	21	17	...	3	4	...	...	...	9	...	47	1	...	...	30	5	2	2	39	78	...	6
8	{ Admitted ... Died ...	737 17	3	304 3	83	16	50	21	...	13	...	...	3	...	10	...	5	...	...	3	17	4	2	16	73	95	...	10
9	{ Admitted ... Died ...	428 2	...	180 1	17	6	3	3	...	1	...	...	...	5	4	...	1	...	1	1	9	...	...	4	25	151	1	16
10	{ Admitted ... Died ...	391 3	2	209 2	50	14	18	11	1	1	...	...	...	1	...	2	...	1	...	7	2	...	3	24	44	...	1	
11	{ Admitted ... Died ...	1,689 15	8	1,182 1	62	10	76	14	...	...	...	...	3	...	18	1	6	13	4	...	47	...	4	11	103	68	...	10
12	{ Admitted ... Died ...	941 1	3	593 ...	40	9	33	17	...	8	...	...	3	...	18	...	13	4	6	1	36	...	...	7	105	32	...	5
13	{ Admitted ... Died ...	576 7	...	161 2	58	21	41	8	...	5	3	...	...	...	11	3	6	4	2	...	27	2	1	13	72	134	...	6
14	{ Admitted ... Died ...	588 3	2	318 1	80	9	58	13	2	1	7	...	1	...	15	...	5	1	3	4	26	1	...	11	58	71	1	3	

TABLE

4.—REGIMENTS of

REGIMENT AND STATION OF 1887.	Date of Arrival from Station previously occupied.	Average Strength during 1887.	Admission-rate of 1887 per cent. of the Average Strength.	INVALIDED		DIED		LOSS PER 1,000	
				To their homes for change of air.	For Discharge.	With the Regiment.	Absent from the Regiment.	By Invaliding for Discharge.	By Deaths.
17 13th Bengal Cavalry, Peshawur ...	October 1884, from Rawalpindoe...	470	280	40	2	7	7	4.26	29.36
18 19th Bengal Cavalry, Peshawur ...	November 1886, from Meean Meer	396	206	3	1	3	2	2.53	12.66
19 23rd Native Infantry, Peshawur ...	January 1884, from Field Service...	632	170	7	300	9	3	47.46	19.00
20 24th Native Infantry, Peshawur ...	February 1884, from Field Service	698	173	14	5	9	6	7.16	21.45
21 27th Native Infantry, Peshawur ...	January 1885, from Meean Meer ...	636	267	17	5	11	14	7.86	30.39
22 28th Native Infantry, Peshawur ...	February 1887, from Meerut ...	679	186	32	3	16	2	4.42	26.52
23 45th Native Infantry, Peshawur ...	June 1886, from Jullundur ...	639	224	28	11	16	5	17.21	32.86
24 Nos. 4 and 5 Company Sappers, Peshawur	March 1887, from Roorkee ...	160	347	...	...	(3)	...	...	18.75
REGIMENTS OF THE PUNJAB ...	...	12,979	159	276	191	173	88	11.72	29.11
REGULAR NATIVE ARMY OF THE BENGAL PRESIDENCY ...	...	21,516*	196	955	766	500	283	18.99	18.35

5.—REGIMENTS of the

1 Peshawur Mountain Train, Abbottabad..	April 1885, from Kohat ...	140	90	2	...	...	...	...	...
2 Hazara Mountain Train, Abbottabad ...	April 1886, from Kohat ...	138	84	...	1	1	...	7.09	7.35
3 2nd Punjab Infantry, Abbottabad ...	{ December 1885, from Dera Ismail Khan.	614	45	5	17	3	1	27.49	6.63
4 5th Goorkhas, Abbottabad ...	A stationary Corps ...	617	50	...	11	13	3	17.84	24.97
5 Guide Corps, Murdan ...	A stationary Corps ...	784	145	9	8	4	9	19.24	1.55
6 No. 2 Field Battery, Kohat ...	{ January 1886, from Dera Ismail Khan.	97	249	4	6	1	...	61.86	18.35
7 No. 4 Garrison Company, Kohat ...	Stationary ...	63	79	1	7	2	1	14.267	3.649
8 3rd Punjab Cavalry, Kohat ...	March 1886, from Bunnoo ...	425	157	21	3	7	4	7.96	2.38
9 1st Sikh Regiment, Kohat ...	May 1886, from Peshawur ...	586	187	16	13	10	4	21.81	29.19
10 3rd Sikh Regiment, Kohat ...	October 1884, from Abbottabad ...	560	185	1	7	23	4	12.95	16.55
11 6th Punjab Infantry, Kohat ...	January 1886, from Bunnoo ...	712	122	...	3	16	3	4.21	26.59
12 No. 3 Field Battery, Bunnoo ...	January 1885, from Kohat ...	90	240	4	3	2	2	33.33	41.44
13 4th Punjab Cavalry, Bunnoo ...	{ March 1886, from Dera Ismail Khan.	416	144	16	14	3	...	33.65	7.21
14 3rd Punjab Infantry, Bunnoo ...	{ January 1886, from Dera Ismail Khan.	659	150	3	3	4	7	4.55	10.99
15 5th Punjab Infantry, Bunnoo ...	June 1886, from Kohat ...	583	143	6	3	5	12	5.96	34.67
16 No. 1 Field Battery, Dera Ismail Khan...	December 1885, from Bunnoo ...	90	190	2	2	1	...	22.22	11.11
17 1st Punjab Cavalry, Dera Ismail Khan...	{ February 1886, from Dera Ghazee Khan.	414	81	3	11	4	5	26.67	31.74
18 1st Punjab Infantry, Dera Ismail Khan	December 1885, from Abbottabad..	556	89	...	5	...	2	8.99	3.59
19 4th Punjab Infantry, Dera Ismail Khan	January 1886, from Kohat ...	619	79	...	15	4	3	24.23	11.31
20 2nd Punjab Cavalry, Dera Ghazee Khan	February 1886, from Rajanpore ...	420	140	6	5	...	2	11.90	4.76
21 2nd Sikh Regiment, Dera Ghazee Khan..	February 1885, from Rajanpore ...	334	127	4	10	2	5	29.91	20.96
22 4th Sikh Regiment, Dera Ghazee Khan..	May 1886, from Mooltan ...	600	126	2	13	2	12	21.67	23.33
23 5th Punjab Cavalry, Rajanpore ...	January 1886, from Kohat ...	408	154	7	8	1	2	19.61	7.35
REGIMENTS OF THE PUNJAB FRONTIER FORCE ...	...	9,963	127	114	166	106	81	16.88	19.99

the PUNJAB.—Continued.

Total Admissions into Hospital, and Deaths in Hospital during the year.		CAUSES OF ADMISSIONS INTO HOSPITAL AND OF DEATHS IN HOSPITAL DURING THE YEAR.																									
		Cholera.	Fever.	Dysentery and Diarrhoea.	Ophthalmia.	Rheumatism.	Veneral Affec- tions.	Scurvy.	Anæmia and De- bility.	Guinea Worm.	Dropsy.	Phthisis Pulmon- alis.	Apoplexy.	Neuralgia Affec- tions.	Heart Disease.	Bronchitis and Asthma.	Pleurisy and Pneumonia.	Spleen Disease.	Hepatitis.	Diseases of the Digestive System.	Diseases of the Urinary System.	Diseases of the Ge- nerative System.	Scabies and Skin Diseases.	Abscess and Ulcer.	Injuries.	Punished.	All other Causes.
17	{ Admitted ... 1,318 Died ... 1	5 1	984 2	82 2	20 2	21 2	10 2	...	...	...	...	...	4 1	...	5 1	7 1	2 1	...	5 1	2 1	...	7 1	84 1	77 1	...	3 1
18	{ Admitted ... 815 Died ... 3	3 ...	574 ...	45 ...	13 ...	13 ...	7 ...	2 ...	...	...	2 ...	1 1	5 ...	...	8 ...	4 1	2 ...	...	11 ...	...	3 ...	7 ...	61 ...	60 ...	...	5 ...
19	{ Admitted ... 1,073 Died ... 5	13 5	673 1	68 2	24 2	28 2	23 2	7 ...	...	...	3 2	...	19 ...	...	16 ...	6 ...	8 ...	2 ...	9 ...	4 ...	4 ...	17 ...	71 ...	72 ...	...	7 ...
20	{ Admitted ... 1,210 Died ... 2	6 2	842 2	98 2	16 2	28 2	3 ...	...	...	...	1 ...	1 ...	8 ...	...	6 ...	4 ...	12 ...	1 ...	46 ...	2 ...	...	10 ...	77 ...	47 ...	...	2 ...
21	{ Admitted ... 1,697 Died ... 11	8 4	1,348 2	160 2	18 2	11 2	16 2	1 1	4 1	...	...	...	...	5 ...	16 ...	10 ...	3 1	...	11 1	4 1	...	2 ...	65 ...	11 ...	2 ...	2 ...
22	{ Admitted ... 1,363 Died ... 10	12 6	947 4	123 1	17 1	43 1	16 ...	...	20 ...	...	...	3 1	1 ...	10 ...	32 2	4 2	14 1	1 ...	27 1	2 ...	...	4 ...	53 ...	33 ...	...	2 ...
23	{ Admitted ... 1,492 Died ... 10	9 9	1,292 1	102 1	13 ...	17 1	7 ...	...	1 ...	...	1 2	1 ...	...	1 ...	10 1	3 1	3 1	1 ...	5 ...	...	...	2 ...	11 ...	7 ...	...	4 ...
24	{ Admitted ... 506 Died ... 3	1 1	358 1	30 ...	7 ...	5 ...	6 ...	3 ...	1	2	4 ...	1 ...	2	20	36 ...	31 ...	1
{ Admitted ... 20,569 Died ... 173		104 18	12,912 21	1,480 21	412 21	670 21	309 ...	15 ...	109 ...	39 ...	1 12	32 2	11 2	209 ...	6 2	303 6	109 10	81 1	23 ...	495 1	43 ...	23 ...	187 ...	1,399 1	1,496 21	6 ...	126 ...
{ Admitted ... 56,220 Died ... 380		215 117	28,935 123	5,454 67	917 ...	2,268 18	1,773 2	63 ...	355 13	107 ...	25 2	64 23	23 2	384 ...	20 6	1,101 12	264 23	332 11	66 7	1,478 1	71 ...	108 ...	1,486 ...	4,711 5	5,050 19	21 ...	572 32

PUNJAB FRONTIER FORCE.

1	{ Admitted ... 135 Died ... 1	2	45	15	2	12	2	...	...	...	...	...	...	2	...	1	3	...	...	13	...	1	1	16	19	...	1
2	{ Admitted ... 115 Died ... 1	...	41	...	...	6	2	...	...	...	...	...	...	1	...	3	4	...	...	10	1	1	3	6	21	2	1
3	{ Admitted ... 294 Died ... 1	3	138	14	5	15	14	...	5	...	...	...	...	4	...	6	1	1	3	18	...	...	5	27	28	...	7
4	{ Admitted ... 528 Died ... 1	11	256	26	46	16	33	1	...	...	...	...	...	...	...	10	7	...	...	7	2	4	7	34	46	9	13
5	{ Admitted ... 1,107 Died ... 1	3	369	77	55	66	18	7	...	...	...	2	...	34	...	40	12	5	...	95	7	4	31	122	156	...	4
6	{ Admitted ... 236 Died ... 1	...	127	21	10	1	6	...	3	...	...	...	...	1	...	1	1	2	...	9	1	...	1	17	35	...	...
7	{ Admitted ... 37 Died ... 1	...	14	4	3	5	2	...	...	...	...	...	...	1	...	...	2	1	...	3	...	...	...	1	1	...	...
8	{ Admitted ... 583 Died ... 1	7	296	38	3	7	16	...	3	1	...	...	1	7	...	14	3	3	...	16	2	...	2	67	74	...	1
9	{ Admitted ... 1,113 Died ... 1	8	903	46	6	19	9	...	1	2	...	...	1	8	...	4	4	...	...	4	...	...	1	51	41	1	4
10	{ Admitted ... 1,082 Died ... 1	22	749	100	10	19	13	...	1	...	1	2	1	7	1	22	5	2	...	30	1	1	11	37	53	1	4
11	{ Admitted ... 872 Died ... 1	10	528	80	16	16	14	...	9	8	...	...	...	9	...	20	20	3	...	21	1	...	10	63	40	...	5
12	{ Admitted ... 252 Died ... 1	1	155	18	2	6	2	...	...	2	...	...	...	2	...	1	...	1	...	7	...	...	4	17	33	...	1
13	{ Admitted ... 597 Died ... 1	2	296	35	12	12	7	...	5	3	...	...	1	8	...	30	5	...	1	13	4	3	22	47	86	...	5
14	{ Admitted ... 1,052 Died ... 1	2	755	69	6	19	2	2	3	13	...	2	1	8	...	19	13	18	1	26	1	1	8	53	28	...	3
15	{ Admitted ... 848 Died ... 1	1	490	66	21	19	28	...	2	1	1	1	1	13	...	19	8	2	1	34	1	...	10	81	46	...	2
16	{ Admitted ... 120 Died ... 1	...	28	14	1	13	4	...	1	...	...	...	...	1	...	3	...	2	...	6	1	...	1	22	23	...	...
17	{ Admitted ... 336 Died ... 1	...	162	10	7	9	7	...	...	7	...	...	...	4	...	6	6	3	...	15	1	...	6	33	39	...	1
18	{ Admitted ... 497 Died ... 1	...	237	38	13	24	12	...	...	...	1	...	...	2	...	9	9	2	2	11	1	1	6	99	19	1	10
19	{ Admitted ... 495 Died ... 1	...	192	17	18	23	23	...	2	17	...	1	2	13	...	24	8	4	...	20	...	2	6	86	11	...	6
20	{ Admitted ... 590 Died ... 1	...	267	20	7	14	5	...	6	1	...	...	...	1	...	29	...	7	...	14	1	...	5	49	68	...	6
21	{ Admitted ... 485 Died ... 1	1	239	22	6	15	6	...	2	...	...	2	...	8	...	15	3	1	1	13	...	1	4	49	38	...	4
22	{ Admitted ... 719 Died ... 1	2	404	31	11	18	2	...	10	2	...	1	...	10	...	14	4	5	...	21	...	1	...	71	30	1	3
23	{ Admitted ... 629 Died ... 1	...	292	12	8	9	9	...	7	4	...	...	...	11	...	4	...	...	...	12	...	...	11	129	112	...	8
{ Admitted ... 12,661 Died ... 493		75	7,194	796	269	361	236	16	60	61	3	11	8	155	1	294	118	62	9	418	25	30	155	1,205	1,023	16	89

Regimental Annual Returns.

Cautionary Note.

For complete details see the series of Tables for the year.

6.—REGIMENTS OF THE CENTRAL

REGIMENTS.	Average Strength during 1867.	To their homes for change of air.	INVALIDED		DIED		Loss per 1,000	
			To their homes for change of air.	For Discharge.	With the Regiment.	Absent from the Regiment.	By Invaliding for Discharge.	By Deaths.
1 2nd Central India Horse, Augur ...	408	6	5	3	1	2	604	606
2 1st Central India Horse, Goonah ...	408	54	2	2	...	2	102	402
3 Bhopal Battalion, Sehorc	649	100	...	10	7	2	1543	1369
4 Meywar Bheel Corps, Khorwarrah	705	64	...	11	6	3	1560	1277
5 Malwa Bheel Corps, Sirdarpore ...	557	78	12	5	3	3	898	1077
6 Deolce Irregular Force	760	123	...	4	5	3	526	407
7 Eriapoorah Irregular Force	852	110	10	7	3	3	823	764
REGIMENTS OF THE CENTRAL INDIA IRREGULAR FORCE	4,513	...	29	42	25	18	701	657

* The Admission-rates calculated on the strength here shown, are incorrect. The strength

ANNUAL RELIEF OF THE

CAVALRY REGIMENTS.

1st Cavalry	From Nowgong, Jubbulpore, and Nagode.	To Morar	... Arrived	December 1867.
Squadron, 2nd Cavalry	„ Eriapoorah	„ Saugor	... Arrived	November 1867.
6th Cavalry	„ Sealkote	„ Cawnpore and Jhansie	... Arrived	December 1867.
7th Cavalry	„ Lucknow	„ Nowgong, Jubbulpore, and Nagode.	... Arrived	November 1867.
10th Cavalry	„ Saugor	„ Abyssinian Expedition	... Embarked	December 1867.
12th Cavalry	„ Cawnpore and Jhansie	„ Abyssinian Expedition	... Embarked	January 1868.
13th Cavalry	„ Peshawur	„ Lucknow	... Arrived	March 1868.
16th Cavalry	„ Morar	„ Rawul Pindee	... Arrived	March 1868.
18th Cavalry	„ Rawul Pindee	„ Peshawur	... Arrived	December 1867.

INFANTRY REGIMENTS.

3rd Native Infy.	From Meer Meer	To Peshawur	... Arrived	February 1868.
4th Native Infy.	„ Jhansie	„ Allahabad	... Arrived	December 1867.

The Regiments of the Abyssinian Expeditionary Force are directed on their return to occupy the following Infantry, Rawul Pindee.

Total Admissions into Hospital, and Deaths in Hospital during the year.		CAUSES OF ADMISSIONS INTO HOSPITAL AND OF DEATHS IN HOSPITAL DURING THE YEAR.																										
		Cholera.	Fever.	Dysentery and Diarrhoea.	Ophthalmia.	Rheumatism.	Veneral Affections.	Scurvy.	Anemia and Debility.	Guinea Worm.	Dropsy.	Phthisis Pulmonalis.	Apoplexy.	Neuralgic Affections.	Heart Diseases.	Bronchitis and Asthma.	Pleurisy and Pneumonia.	Spleen Disease.	Hepatitis.	Diseases of the Digestive System.	Diseases of the Urinary System.	Diseases of the Generative System.	Scabies and Skin Diseases.	Abscess and Ulcer.	Injuries.	Punished.	All other Causes.	
1	{ Admitted ... 848 Died ... 1	...	140	23	14	18	15	...	3	5	1	4	...	4	4	...	4	...	2	...	1	7	21	63	...	4
2	{ Admitted ... 265 Died	100	29	17	13	19	1	...	9	1	8	...	5	4	2	...	3	4	17	27	...	1
3	{ Admitted ... 1,040 Died ... 7	...	555	94	24	44	28	...	13	5	...	...	...	25	...	19	6	3	...	47	...	...	11	70	70	...	26
4	{ Admitted ... 616 Died ... 6	...	297	36	41	15	3	...	8	71	3	...	10	1	1	2	...	2	9	77	36	...	14
5	{ Admitted ... 434 Died ... 3	...	140	35	23	27	4	2	8	40	1	1	...	15	...	17	8	1	...	19	1	4	8	28	26	...	8	
6	{ Admitted ... 937 Died ... 2	20	282	40	62	62	72	...	4	28	...	...	...	10	...	12	8	1	...	20	1	1	28	109	188	...	10
7	{ Admitted ... 966 Died ... 3	...	315	53	46	40	71	...	...	62	...	1	...	15	...	18	5	...	1	71	1	6	12	95	152	...	7
{ Admitted ... 4,000 Died ... 25		20	1,823	309	226	225	212	3	36	219	2	2	1	80	...	85	36	6	7	163	3	15	79	416	562	...	70	

is inclusive of Detachments, while the admissions are those of the Head Quarters strength only.

NATIVE ARMY, 1867-68.

INFANTRY REGIMENTS.—Continued.

5th Native Infy.	From Dacca and Cachar	To Benares	... Arrived	January 1868.
7th Native Infy.	" Allahabad	" Dacca and Cachar	... Arrived	December 1867.
8th Native Infy.	" Bareilly	" Jhansi	... Arrived	December 1867.
14th Native Infy.	" Benares	" Fort William	... Arrived	January 1868.
17th Native Infy.	" Barrackpore	" Delhi	... Arrived	November 1867.
20th Native Infy.	" Rawul Pindee	" Meean Meer	... Arrived	January 1868.
21st Native Infy.	" Meean Meer	" Abyssinian Expedition	... Embarked	December 1867.
23rd Native Infy.	" Peshawur	" Abyssinian Expedition	... Embarked	December 1867.
24th Native Infy.	" Peshawur	" Rawul Pindee	... Arrived	February 1868.
25th Native Infy.	" Delhi	" Peshawur	... Arrived	January 1868.
27th Native Infy.	" Peshawur	" Bareilly	... Arrived	March 1868.

stations: 10th Cavalry, Sealkote; 12th Cavalry, Umballa; 21st Native Infantry, Meean Meer; and 23rd Native

3. JAIL POPULATION, 1867.

I.

TABLE showing the SICKNESS and MORTALITY among the JAIL POPULATION of the BENGAL PRESIDENCY during the Year 1867, and the prevalence of the principal Diseases in each Month of the Year.

MONTHS.	Average Strength.	Average number daily sick.	Number daily sick per cent. of Strength.	Number of Deaths.	Died per 1000 of Strength.	CAUSES OF DEATHS IN HOSPITAL.																
						Cholera.	Smallpox.	Fever.	Apoplexy.	Dysentery.	Diarrhoea.	Hepatitis.	Spleen Disease.	Respiratory Diseases.	Heart Disease.	Phthisis Pulmonalis.	Dropsy.	Scurvy.	Atrophy and Anæmia.	Wounds and Accidents.	All other Causes.	
January ...	56,514	1,592	2.82	143	...	3	1	20	2	44	30	...	3	23	...	6	4	2	6	3	11	
February ...	55,791	1,502	2.69	141	...	2	4	6	3	38	21	1	...	21	1	8	6	...	13	1	16	
March ...	55,472	1,540	2.76	130	...	27	3	17	...	25	16	1	1	13	1	7	2	1	8	...	6	
April ...	55,128	1,663	3.07	159	...	39	...	39	2	16	20	3	1	11	1	5	2	1	8	4	7	
May ...	55,048	1,665	3.02	173	...	62	1	17	1	26	14	1	...	15	1	12	5	...	7	...	11	
June ...	54,701	1,516	2.77	109	...	11	...	14	6	21	12	3	1	10	...	6	4	...	10	5	6	
July ...	55,198	1,586	2.87	122	...	26	...	13	4	27	11	1	2	10	...	8	3	...	4	1	11	
August ...	54,926	1,847	3.36	174	...	36	...	13	3	51	21	2	1	11	...	8	2	...	13	2	10	
September ...	54,859	2,337	4.26	215	...	44	...	23	1	69	18	5	1	9	...	10	4	...	18	3	11	
October ...	54,551	2,279	4.18	229	...	5	...	31	1	79	49	3	1	13	1	13	1	1	8	3	21	
November ...	53,900	1,984	3.67	258	...	13	1	32	2	83	42	1	6	14	5	11	7	2	13	4	20	
December ...	53,359	1,738	3.26	235	...	3	...	40	...	71	32	1	5	27	3	8	8	2	14	1	17	
						271	10	265	25	552	265	22	22	192	14	102	46	9	123	25	151	
Died per 1000 of the Average Strength.																						
For the year	54,962	1,775	3.23	2,106*	39.32	4.93	1.18	4.82	4.6	15.23	4.9	4.0	4.0	3.31	2.6	1.86	3.7	1.7	2.22	4.6	2.75	

CAUSES OF ADMISSIONS.	NUMBER OF ADMISSIONS INTO HOSPITAL IN EACH MONTH.												Total Admissions during the Year.	Admitted per cent. of Strength.	Died per cent. of Admissions.
	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.			
Cholera	5	2	83	94	113	29	72	106	76	12	30	6	632	1.15	42.88
Smallpox	32	22	32	13	12	9	2	1	...	...	2	3	128	2.3	7.81
Fever, Intermittent	1,130	1,031	1,402	1,557	1,464	1,398	1,797	2,470	3,749	3,531	2,341	1,441	23,311	42.41	35
" Remittent	168	102	212	308	218	168	190	237	272	175	198	181	2,429	4.42	7.57
" Continued	2	4	...	2	6	11	7	5	2	...	2	1	42	.08	59.52
Apoplexy	328	247	272	377	349	294	541	779	662	544	551	492	5,446	9.89	7.69
Dysentery	278	273	475	558	517	456	610	601	589	429	343	364	5,403	10.00	...
Diarrhoea	3	2	6	9	6	10	7	11	9	7	7	5	82	.15	26.63
Hepatitis	44	21	21	28	30	37	32	29	44	81	51	44	462	.84	4.76
Spleen Disease	205	179	148	159	138	147	141	134	112	131	153	197	1,838	3.35	9.90
Respiratory Diseases	17	17	10	16	25	15	6	13	18	21	16	19	193	.35	52.85
Phthisis Pulmonalis	17	16	10	9	8	18	10	12	14	14	17	26	171	.31	28.07
Dropsy	47	41	32	40	46	47	37	42	36	46	43	49	606	.92	24.11
Atrophy and Anæmia	16	6	24	18	5	15	9	11	13	18	44	30	209	.39	4.31
Scurvy	113	110	105	111	100	114	107	117	119	133	127	99	1,355	2.47	...
Rheumatism	100	99	122	113	125	115	122	103	102	93	82	99	1,275	2.32	...
Veneral Diseases	48	43	100	103	90	62	86	90	71	80	45	40	858	1.56	...
Eye Diseases	538	496	492	527	572	637	717	646	532	491	429	422	6,485	11.99	1.03
Abscess and Ulcer	145	165	189	223	209	215	247	216	174	160	156	155	2,254	4.10	...
Wounds and Accidents	699	513	562	642	518	505	550	492	490	433	363	420	6,157	11.20	...
All other Causes	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	3,642	3,359	4,287	4,963	4,551	4,302	5,200	6,115	7,084	6,402	4,999	4,093	59,316*		
Admitted per cent. of the Average Strength in each Month.															
	6.79	6.08	7.73	9.00	8.27	7.86	9.58	11.13	12.01	11.73	9.26	7.67	107.92		

* The details of Admissions and Deaths are given in Table XII, and in the Summary which closes the series of Tables for the year.

JAILS OF THE BENGAL PRESIDENCY, 1867.

II.

TABLE showing the SICKNESS and MORTALITY among the JAIL POPULATION in LOWER BENGAL and in ASSAM during the Year 1867, and the prevalence of the principal Diseases in each Month of the Year.

MONTHS.	Average Strength.	Average number daily Sick.	Number daily sick per cent. of Strength.	Number of Deaths.	Died per 1000 of Strength.	CAUSES OF DEATHS IN HOSPITAL.																	
						Cholera.	Smallpox.	Fever, Intermittent.	Fever, Remittent.	Fever, Continued.	Apoplexy.	Dysentery.	Diarrhoea.	Hepatitis.	Spleen Disease.	Respiratory Diseases.	Heart Diseases.	Phthisis Pulmonalis.	Dropsy.	Scurvy.	Atrophy and Anæmia.	Wounds and Accidents.	All other Causes.
January	17,083	711	4.16	89	...	3	1	1	5	1	1	25	10	...	1	19	...	4	3	...	6	3	5
February	16,309	685	4.08	82	...	2	3	2	1	...	2	28	11	...	...	7	1	4	6	...	6	1	10
March	16,153	608	3.76	77	...	19	3	1	2	1	...	18	10	...	...	7	...	6	2	...	5	...	2
April	15,844	612	3.86	70	...	23	...	3	3	...	2	6	7	1	...	7	1	3	2	1	4	1	4
May	15,876	579	3.65	107	...	50	1	...	3	...	...	22	6	1	...	7	...	8	4	...	2	...	4
June	15,723	580	3.68	43	...	...	...	3	3	...	1	13	5	1	1	3	...	3	4	...	5	1	4
July	15,709	645	4.11	62	...	13	...	3	2	...	1	18	4	1	1	5	...	6	1	...	3	...	6
August	15,433	693	4.47	69	...	4	...	6	1	...	1	21	8	2	...	8	...	5	1	...	8	1	3
September	15,237	685	4.49	65	...	2	...	4	1	1	1	24	3	2	1	3	...	3	4	...	12	1	3
October	15,158	696	4.58	62	...	...	1	2	1	2	...	20	10	2	...	6	...	9	1	...	2	1	6
November	15,034	664	4.42	84	...	2	1	2	7	1	...	31	6	1	5	4	1	5	4	...	5	2	7
December	14,690	641	4.36	80	...	2	...	3	4	...	...	32	7	1	3	12	2	4	2	...	5	...	4
						119	9	27	32	6	9	257	87	13	11	88	8	60	34	1	62	11	56
Died per 1000 of the Average Strength.																							
For the year	15,092	648	4.13	889*	56.65	7.58	.59	4.14	.58			21.92	.83	.70	5.01	.32	3.82	2.16	.06	3.95	.70	3.70	

CAUSES OF ADMISSIONS.	NUMBER OF ADMISSIONS INTO HOSPITAL IN EACH MONTH.												Total Admissions during the Year.	Admitted per cent. of Strength.	Died per cent. of Admissions.
	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.			
Cholera	5	2	49	60	77	4	42	13	12	3	8	6	281	1.79	42.35
Smallpox	12	15	13	3	7	3	...	...	...	...	2	1	56	.36	16.07
Fever, Intermittent	461	446	516	607	533	531	742	921	746	852	720	552	7,627	48.60	.34
" Remittent	66	59	78	77	85	108	127	162	177	105	142	111	1,292	8.23	2.94
" Continued	1	1	...	2	...	1	1	1	1	...	...	1	9	.06	100.00
Apoplexy	159	144	127	207	182	168	257	278	278	223	225	240	2,487	15.85	6.97
Dysentery	118	136	261	244	293	218	267	239	228	155	146	157	2,452	15.62	...
Diarrhoea	1	1	3	4	3	2	3	6	4	4	3	...	83	.21	39.40
Hepatitis	91	13	13	14	14	25	19	16	16	21	19	29	229	1.46	4.80
Spleen Disease	95	76	56	62	56	61	56	64	60	25	58	73	792	5.05	11.11
Respiratory Diseases	10	13	6	6	18	10	4	5	8	18	10	12	120	.77	50.00
Phthisis Pulmonalis	17	13	8	8	6	13	9	11	13	10	7	20	135	.86	25.18
Dropsy	22	24	14	24	19	25	22	29	17	21	17	26	280	1.66	23.85
Atrophy and Anæmia	6	...	6	4	3	9	3	5	5	6	8	13	68	.43	1.47
Scurvy	73	62	53	51	38	49	45	56	46	57	48	42	622	3.96	...
Rheumatism	39	35	45	40	40	30	46	33	42	23	27	38	444	2.83	...
Veneral Diseases	16	8	20	11	21	14	19	21	21	23	14	14	202	1.29	...
Eye Diseases	155	153	146	101	116	141	164	151	117	112	104	101	1,561	9.95	1.18
Abscess and Ulcer	44	65	79	64	68	69	60	75	53	59	45	60	740	4.72	...
Wounds and Accidents	426	261	278	201	218	207	196	186	185	171	131	177	2,697	17.19	...
All other Causes															
	1,756	1,527	1,764	1,850	1,787	1,693	2,082	2,275	2,029	1,938	1,734	1,672	22,107		
Admitted per cent. of the Average Strength in each Month.															
	10.28	9.26	10.32	11.69	11.26	10.76	13.26	14.69	13.32	12.79	11.53	11.38	14.98		

* The Annual Returns show a Total Mortality of 893. Four Deaths which occurred in Sub-divisional Jails are not included in the General Tables.

III.

TABLE showing the SICKNESS and MORTALITY among the JAIL POPULATION in the DINAPORE, BENARES, OUDE, and CAWNPORE DISTRICTS during the Year 1867, and the prevalence of the principal Diseases in each Month of the Year.

MONTHS.						CAUSES OF DEATHS IN HOSPITAL.																		
						Cholera.	Smallpox.	Fever, Intermittent.	Fever, Remittent.	Fever, Continued.	Apoplexy.	Dysentery.	Diarrhea.	Hepatitis.	Spleen Disease.	Respiratory Diseases.	Heart Diseases.	Phthisis Pulmonalis.	Dropsy.	Scurvy.	Atrophy and Anæmia.	Wounds and Accidents.	All other Causes.	
January	16,523	351	2.09	37	...	...	...	1	3	...	1	16	9	...	1	3	...	1	1	1	...	...	...
February	17,232	373	2.16	26	...	...	...	2	...	...	...	7	6	...	...	3	...	2	...	...	4	...	...
March	17,117	413	2.37	30	...	8	...	2	...	...	...	6	6	...	...	3	...	...	...	...	...	...	...
April	17,271	447	2.59	44	...	14	...	2	3	...	...	5	9	1	1	2	...	3	...	...	2	1	...
May	17,341	431	2.50	23	...	1	...	1	1	...	...	3	5	...	...	3	...	3	1	...	3	...	...
June	17,024	385	2.26	26	...	1	...	1	4	...	...	4	3	1	...	2	...	3	...	...	3	...	...
July	17,019	406	2.39	23	...	1	...	1	6	...	...	4	3	...	1	1	...	1	1	...	1	1	...
August	16,817	532	3.16	65	...	19	...	...	3	...	1	27	5	...	1	2	...	1	...	...	3	...	...
September	16,808	651	3.88	102	...	36	...	4	1	1	...	37	9	1	...	3	...	3	...	...	2	1	...
October	16,742	622	3.72	91	...	5	...	2	6	...	...	11	29	1	1	2	1	3	...	...	2	2	...
November	16,492	537	3.26	81	...	11	...	2	5	...	...	39	11	...	...	3	2	3	3	2	3	1	...
December	16,277	493	3.03	74	...	1	...	...	22	...	...	21	7	...	2	4	...	1	3	2	5	1	...
						97	...	15	54	1	2	201	93	4	7	31	4	23	9	5	27	7	39	
Died per 1000 of the Average Strength.																								
For the year	16,940	170	2.78	622	36.72	573	...	431	...	12	...	1736	24	11	183	21	136	53	29	159	11	230	...	

CAUSES OF ADMISSIONS.	NUMBER OF ADMISSIONS INTO HOSPITAL IN EACH MONTH.												Total Admissions during the Year.	Admitted per cent. of Strength.	Died per cent. of Admissions.
	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.			
Cholera	...	...	34	27	5	4	10	60	50	9	22	...	227	1.34	42.73
Smallpox	18	7	10	8	4	6	1	1	...	...	...	2	57	34	...
Fever, Intermittent	227	227	385	382	368	267	371	555	591	635	154	268	4,732	27.93	38
" Remittent	7	16	23	44	33	27	39	45	31	34	31	51	372	2.20	14.79
" Continued	1	1	...	...	2	...	...	3	...	...	...	...	7	41	28.57
Apoplexy	101	64	91	113	100	82	162	316	234	186	164	151	1,790	10.67	8.62
Dysentery	98	78	119	206	130	125	112	186	263	131	83	80	1,620	9.54	26.62
Diarrhea	...	...	...	1	1	2	3	1	1	3	1	2	15	9	67.65
Hepatitis	7	2	1	1	3	2	2	5	2	4	8	4	41	24	17.07
Spleen Disease	43	27	21	19	26	30	27	30	23	16	31	27	320	1.89	9.69
Respiratory Diseases	3	1	2	5	3	2	...	1	8	2	3	1	34	20	67.65
Phthisis Pulmonalis	...	3	1	...	1	2	...	...	...	3	7	4	21	12	42.30
Dropsy	10	5	8	6	15	6	4	9	9	15	13	8	168	9.81	25.00
Atrophy and Anæmia	3	1	...	...	...	...	...	...	...	3	31	10	48	29	19.12
Scurvy	11	15	18	18	17	22	16	27	30	47	40	30	291	1.72	...
Rheumatism	28	33	49	36	45	46	39	45	36	39	36	36	468	2.78	...
Veneral Diseases	17	21	59	60	25	16	31	33	18	21	16	8	331	1.95	...
Eye Diseases	153	158	143	174	214	208	212	203	184	137	111	112	2,009	11.86	94
Abscess and Ulcer	44	51	65	73	77	62	89	72	59	48	60	41	741	4.37	...
Wounds and Accidents	88	125	132	178	129	129	140	121	137	109	108	104	1,500	8.86	...
All other Causes	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	859	835	1101	1,351	1,194	1,038	1,282	1,716	1,624	1,445	1,219	948	14,732	...	...
Admitted per cent. of the Average Strength in each Month.															
	5.11	4.84	6.84	7.82	6.89	6.09	7.53	10.39	9.66	8.63	7.39	5.82	86.96	...	...

JAILS OF THE BENGAL PRESIDENCY, 1867.

IV.

TABLE showing the SICKNESS and MORTALITY among the JAIL POPULATION in NAGPORE and CENTRAL INDIA during the Year 1867, and the prevalence of the principal Diseases in each Month of the Year.

MONTHS.	Average Strength.	Average number daily sick.	Number daily sick per cent. of Strength.	Number of Deaths.	Died per 1000 of Strength.	CAUSES OF DEATHS IN HOSPITAL.																	
						Cholera.	Smallpox.	Fever, Intermittent.	Fever, Remittent.	Fever, Continued.	Apoplexy.	Dysentery.	Diarrhoea.	Hepatitis.	Spleen Disease.	Respiratory Diseases.	Heart Diseases.	Phthisis Pulmonalis.	Dropsy.	Scurvy.	Atrophy and Anæmia.	Wounds and Accidents.	All other Causes.
January	4,438	243	5.47	10								2	5		1	1			1				1
February	4,387	194	4.42	16							1	5	4			12			1				1
March	4,250	204	4.80	2				1	1							1						1	1
April	4,361	207	4.75	2				12				2	1			1						1	
May	4,384	200	4.57	9				12			3	1	1			1							
June	4,387	197	4.49	9						1		12	3									1	
July	4,519	180	4.14	9								1	3										2
August	4,526	224	4.93	12				1				2	4			1							
September	4,496	280	6.23	11		1		1	1			1			1								
October	4,507	355	7.88	17				2	1	1		3	5						1				
November	4,400	299	6.80	30				12	1		1	4	13		1	4							
December	4,393	260	5.92	23				1				4	7		1	1			1				3
						1		12	4	5	3	30	46	1	3	17		2	1	3	16	2	15
Died per 1000 of the Average Strength.																							
For the year	4,421	239	5.41	161	36.42	23		175	68	17.10	23	68	3.84		45	23	68	3.62	45	3.39			

CAUSES OF ADMISSIONS.	NUMBER OF ADMISSIONS INTO HOSPITAL IN EACH MONTH.												Total Admissions during the Year.	Admitted per cent. of Strength.	Died per cent. of Admissions.
	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.			
Cholera								2	1				3	07	33.33
Smallpox			4										4	09	
Fever, Intermittent	186	149	147	161	154	134	108	270	560	743	449	270	3,461	78.20	35
" Remittent	2	5	12	12	13	11	4	5	5	9	6	5	69	2.01	10.11
" Continued					3	2	1				1		8	19	37.50
Apoplexy		1			3	2	1								
Dysentery	38	22	19	15	23	15	34	54	34	32	64	31	341	8.62	9.41
Diarrhoea	27	20	14	34	26	30	40	44	45	48	44	51	427	9.69	
Hepatitis		1		1	1	3	1		2		2	1	12	27	8.33
Spleen Disease	1	1	1	4	3	1	1	3	3	8	5	4	35	90	8.57
Respiratory Diseases	18	26	25	21	18	14	26	10	8	24	16	17	232	5.25	7.33
Phthisis Pulmonalis	1	1		2	2	1							7	16	28.57
Dropsy											1		1	03	
Atrophy and Anæmia	6	6	5	2	4	1	6	2	4	3	7	8	54	1.22	29.63
Scurvy		1	2							2	1		6	14	60.00
Rheumatism	9	14	13	20	24	17	15	11	14	14	13	11	175	3.95	
Venereal Diseases	8	7	6	12	17	14	13	9	13	14	7	11	131	2.96	
Eye Diseases	4	7	8	13	13	9	10	10	5	11	4	3	97	2.19	
Abscess and Ulcer	93	61	84	93	129	137	141	131	100	122	89	69	1,230	27.82	65
Wounds and Accidents	28	19	21	39	27	31	41	28	23	27	13	22	307	6.94	
All other Causes	58	45	67	60	55	49	62	55	57	55	49	58	671	15.18	
	459	380	432	469	534	469	503	631	874	1,102	771	561	7,331		
Admitted per cent. of the Average Strength in each Month.															
	11.02	8.80	10.16	11.21	12.18	10.99	13.12	13.94	19.44	24.45	17.52	12.77	165.82		

V.

TABLE showing the SICKNESS and MORTALITY among the JAIL POPULATION in the AGRA, MEERUT, and BOHILCUND DISTRICTS during the Year 1867, and the prevalence of the principal Diseases in each Month of the Year.

MONTHS.	Average Strength.	Average number daily sick.	Number daily sick per cent. of Strength.	Number of Deaths.	Died per 1000 of Strength.	CAUSES OF DEATHS IN HOSPITAL.																	
						Cholera.	Smallpox.	Fever, Intermittent.	Fever, Remittent.	Fever, Continued.	Apoplexy.	Dysentery.	Diarrhoea.	Hepatitis.	Spleen Disease.	Respiratory Diseases.	Heart Diseases.	Phthisis Pulmonalis.	Dropsy.	Scurvy.	Atrophy and Anæmia.	Wounds and Accidents.	All other Causes.
January	7,014	102	1'31	17	1	5	4	2	...	1	4
February	7,426	97	1'31	9	2	1	...	2
March	7,397	103	1'39	3	1
April	7,305	120	1'63	7	...	2	1	2	1	1	...	1
May	7,259	119	1'61	8	...	2	...	1	...	1	13	1	...	1
June	7,274	108	1'47	7	2	1	...	1	...	13
July	7,485	114	1'52	5	2	1	...	1	1
August	7,405	117	1'60	10	...	7	...	...	...	...	...	1	2	...	...	...	...	...	...	...	...	...
September	7,586	148	1'95	24	...	3	...	1	3	2	...	2	6	1	...	...	...	3	...	...	2	...
October	7,409	141	1'90	24	...	...	...	2	1	1	...	6	8	...	...	...	...	1	...	...	1	...
November	7,329	181	1'79	31	...	...	...	2	1	2	...	8	9	...	...	...	...	3	...	...	3	1
December	7,208	120	1'67	24	...	...	...	...	1	2	...	7	4	...	...	2	...	1	1	...	2	...
						13	...	7	11	10	...	29	35	2	...	16	...	13	3	...	11	3	
						Died per 1000 of the Average Strength.																	
For the year	7,403	121	1'61	175	23'64	1'76	...	3'78	...	8'65	27	...	2'16	...	1'76	40	...	1'49	40	...	2'97	...	

CAUSES OF ADMISSIONS.	NUMBER OF ADMISSIONS INTO HOSPITAL IN EACH MONTH.												Total Admissions during the Year.	Admitted per cent. of Strength.	Died per cent. of Admissions.
	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.			
Cholera	...	...	...	11	9	...	3	20	2	...	...	...	45	61	28'49
Smallpox	...	...	2	1	1	...	...	...	...	...	...	...	4	05	...
Fever, Intermittent	60	60	72	119	117	136	162	223	197	181	117	81	1,538	20'78	46
" Remittent	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
" Continued	21	8	17	22	18	13	13	14	19	9	10	11	175	2'37	12'00
Apoplexy	...	1	...	...	...	...	...	...	...	...	...	...	1	01	...
Dysentery	5	6	11	11	15	10	28	49	51	34	31	26	276	3'73	9'36
Diarrhoea	19	14	14	27	30	29	52	52	45	45	29	32	388	5'24	...
Hepatitis	...	...	3	...	1	2	...	2	2	...	...	...	10	11	20'00
Spleen Disease	1	...	1	...	...	...	1	2	1	...	...	...	6	08	...
Respiratory Diseases	17	10	17	25	18	19	19	7	11	5	17	24	200	2'70	8'00
Phthisis Pulmonalis	1	...	1	3	1	2	2	3	...	1	3	3	20	27	65'00
Dropsy	...	...	...	...	...	1	1	1	...	...	1	...	4	05	75'00
Atrophy and Anæmia	4	2	2	5	3	2	2	1	4	2	3	2	32	13	31'37
Scurvy	...	...	...	...	1	...	1	...	...	...	...	...	2	03	...
Rheumatism	8	2	8	8	5	11	13	7	14	6	13	7	102	1'34	...
Venerical Diseases	7	6	7	9	5	6	7	5	8	9	3	7	79	1'07	...
Eye Diseases	3	1	0	8	12	5	4	5	8	13	4	2	71	08	...
Abscess and Ulcer	63	58	61	73	61	61	70	59	40	54	50	56	716	9'67	1'52
Wounds and Accidents	21	19	14	14	17	23	34	19	21	17	19	13	230	3'10	...
All other Causes	38	27	25	53	38	37	46	46	40	36	28	22	446	6'02	...
	277	221	201	380	352	355	474	520	406	416	328	286	4,345		
Admitted per cent. of the Average Strength in each Month.															
	3'61	2'98	3'53	5'28	4'85	4'88	6'33	6'94	6'11	5'61	4'48	3'97	58'69		

JAILS OF THE BENGAL PRESIDENCY, 1867.

VI.

TABLE showing the SICKNESS and MORTALITY among the JAIL POPULATION in the PUNJAB during the Year 1867, and the prevalence of the principal Diseases in each Month of the Year.

MONTHS.	Average Strength.	Average number daily sick.	Number daily sick per cent. of Strength.	Number of Deaths.	Died per 1000 of Strength.	CAUSES OF DEATHS IN HOSPITAL.																		
						Cholera.	Smallpox.	Fever, Intermittent.	Fever, Remittent.	Fever, Continued.	Apoplexy.	Dysentery.	Diarrhoea.	Hepatitis.	Spleen Disease.	Respiratory Diseases.	Heart Diseases.	Phthisis Pulmonalis.	Dropsy.	Scurvy.	Atrophy and Anæmia.	Wounds and Accidents.	All other Causes.	
January	10,550	185	1.76	11	...	...	...	...	12	1	...	1	...	...	3	...	...	...	...	...	...	...	...	12
February	10,127	173	1.69	8	...	...	1	...	1	...	...	...	...	...	3	...	...	...	...	...	...	...	...	1
March	10,265	212	2.07	12	...	...	...	...	2	2	1	...	...	1	...	...	...	...	...	...	...	...	...	1
April	10,287	307	2.98	30	...	...	...	...	1	25	4	...	...	1	...	...	...	...	...	...	...	...	...	...
May	10,188	324	3.18	26	...	9	...	...	2	4	...	...	...	...	2	...	1	...	...	...	...	...	...	8
June	10,280	216	2.09	25	...	10	...	...	3	3	...	...	...	...	3	...	...	...	...	...	...	...	...	...
July	10,466	232	2.22	23	...	13	...	...	1	1	...	3	2	...	1	...	1	...	...	...	...	...	...	1
August	10,606	252	2.38	12	...	6	...	...	1	1	...	1	...	...	...	...	...	...	...	...	...	...	...	1
September	10,732	564	5.26	13	...	3	...	...	3	3	...	...	4	...	...	1	...	1	...	...	...	...	...	...
October	10,735	406	3.78	35	...	...	...	5	3	2	...	1	9	...	5	...	...	...	...	1	...	...	...	4
November	10,735	353	3.29	30	...	...	...	5	2	...	...	1	10	3	3	2	...	...	...	...	...	...	...	4
December	10,791	224	2.08	34	...	...	...	3	4	...	...	...	6	7	...	...	...	...	1	...	...	...	...	1
						41	1	17	67	4	11	35	24	2	1	30	5	4	1	...	6	2	18	
Died per 1000 of the Average Strength.																								
For the year	10,506	295	2.81	259	24.68	3.90	.10	7.42	1.05	5.62	.10	.10	2.85	.48	.38	.10	...	.57	.19	1.71				

CAUSES OF ADMISSIONS.	NUMBER OF ADMISSIONS INTO HOSPITAL IN EACH MONTH.												Total Admissions during the Year.	Admitted per cent. of Strength.	Died per cent. of Admissions.
	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.			
Cholera	...	...	...	...	22	21	17	11	5	...	...	...	76	.72	53.95
Smallpox	2	...	3	1	...	...	1	...	...	...	...	...	7	.07	14.29
Fever, Intermittent	177	150	252	258	262	330	324	496	1,653	1,120	601	270	5,953	56.67	.29
" Remittent	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
" Continued	12	14	87	213	69	9	16	11	49	18	9	3	501	4.77	12.17
Apoplexy	...	...	...	...	1	8	5	1	1	...	...	...	17	.16	61.71
Dysentery	26	12	24	31	33	19	60	52	65	69	67	11	502	4.78	5.32
Diarrhoea	16	25	33	47	48	54	100	80	68	50	41	35	696	6.77	...
Hepatitis	2	...	1	3	...	1	...	2	...	...	1	2	12	.11	16.67
Spleen Disease	4	5	5	9	10	9	9	3	22	48	19	4	151	1.44	.66
Respiratory Diseases	32	31	20	23	20	24	13	14	7	11	31	56	294	2.80	10.20
Phthisis Pulmonalis	2	2	1	...	1	...	...	1	2	...	...	3	12	.11	33.33
Dropsy	...	...	1	1	1	2	...	...	1	1	1	2	10	.10	10.00
Atrophy and Anæmia	6	4	3	3	5	13	3	1	2	5	3	5	62	.60	11.54
Scurvy	7	4	16	14	1	6	5	6	8	7	4	7	85	.81	...
Rheumatism	12	17	13	14	16	16	18	13	15	9	13	9	165	1.57	...
Veneral Diseases	15	18	15	16	18	13	17	11	3	5	9	7	153	1.40	...
Eye Diseases	8	6	7	11	19	18	19	21	19	9	7	13	157	1.49	...
Abscess and Ulcer	71	66	48	83	61	90	124	112	91	62	71	84	969	9.23	.99
Wounds and Accidents	8	11	11	34	20	31	23	24	18	19	19	19	236	2.24	...
All other Causes	59	65	60	60	77	83	96	84	71	62	47	69	843	8.02	...
	461	429	639	553	651	747	850	943	2,091	1,501	947	626	10,401		
Admitted per cent. of the Average Strength in each Month:															
	4.37	4.03	6.23	5.09	6.71	7.26	8.21	8.89	19.44	13.98	8.82	5.80	102.81		

JAILS OF THE BENGAL PRESIDENCY, 1867.

VII.

COMPARATIVE STATEMENT OF THE RATIOS OF SICKNESS AND MORTALITY among the JAIL POPULATION in the various PROVINCES of the BENGAL PRESIDENCY, for the Year 1867.

DISEASES.	BENGAL PROPER AND ASSAM.			BEHAR PROVINCES, BENARES, OUDH, AND CANNPORE.			NAGPORE AND CENTRAL INDIA.			AGRA, MEERUT, AND ROHILCUND DISTRICTS.			PUNJAB.			BENGAL PRESIDENCY.		
	Average Strength	Daily Sick per cent. of Strength	Admitted per cent. of Strength	Average Strength	Daily Sick per cent. of Strength	Admitted per cent. of Strength	Average Strength	Daily Sick per cent. of Strength	Admitted per cent. of Strength	Average Strength	Daily Sick per cent. of Strength	Admitted per cent. of Strength	Average Strength	Daily Sick per cent. of Strength	Admitted per cent. of Strength	Average Strength	Daily Sick per cent. of Strength	Admitted per cent. of Strength
Cholera	179	42-35	1-34	42-73	1-34	1-34	07	33-33	07	61	28-59	176	73	63-96	115	48-88	54	48-88
Smallpox	38	16-07	34	...	34	34	09	...	09	06	...	...	07	14-29	23	7-81	...	7-81
Fever	56-83	7-8	30-13	1-43	30-13	30-13	80-30	59	80-30	23-15	1-63	3-78	61-44	1-21	46-83	1-06	...	1-06
Dysentery and Diarrhoea	31-47	6-97	20-13	8-62	20-13	20-13	18-28	9-41	18-28	8-97	9-36	8-65	10-55	5-33	19-89	7-66	...	7-66
Hepatitis	21	39-40	09	26-67	09	09	27	8-33	27	11	20-00	27	11	16-67	15	26-83	...	26-83
Spleen Disease	1-46	4-80	24	17-07	24	24	80	8-57	80	08	...	...	1-44	06	84	4-76	...	4-76
Ophthalmia	1-28	...	1-96	...	1-96	1-96	219	...	219	06	...	...	1-49	...	1-63	...	...	1-63
Rheumatism	3-96	...	1-72	...	1-72	1-72	3-96	...	3-96	1-38	...	...	1-67	...	2-47	...	...	2-47
Scurvy	43	1-47	28	10-42	28	28	14	...	14	03	...	...	81	...	38	4-31	...	4-31
Dropsy	86	25-18	12	42-86	12	12	02	...	02	05	75-00	19	10	10-00	31	25-47	...	25-47
Atrophy and Anemia	1-86	23-85	04	25-00	04	04	1-22	29-63	1-22	43	34-37	1-41	49	11-64	32	24-11	...	24-11
Phthisis Pulmonalis	77	50-00	20	67-65	20	20	16	28-57	16	27	63-00	1-76	11	33-33	35	52-85	...	52-85
Apoplexy	06	100-00	04	29-57	04	04	18	37-50	18	01	...	...	16	64-71	08	59-83	...	59-83
Respiratory Diseases	6-05	11-11	1-89	9-69	1-89	1-89	5-25	7-33	5-25	2-70	8-00	2-16	2-80	10-20	3-35	9-90	...	9-90
Veneral Diseases	2-83	...	2-76	...	2-76	2-76	2-96	...	2-96	1-07	...	...	1-46	...	2-32	...	...	2-32
Abscess and Ulcer	9-95	1-18	11-86	9-4	11-86	11-86	27-82	05	27-82	9-67	1-53	2-27	9-23	9-9	11-79	1-08	...	1-08
Injury	4-72	...	4-37	...	4-37	4-37	6-91	...	6-91	3-10	...	...	2-24	...	4-10	...	...	4-10
All other Causes	17-19	...	8-86	...	8-86	8-86	15-18	...	15-18	6-02	...	...	8-02	...	11-20	...	...	11-20
	140-89	...	80-96	...	80-96	80-96	166-82	...	166-82	65-69	...	27-04	103-61	...	107-92	...	...	107-92

Jail Fever caused 26 Deaths in the Jail at Goudah, and 22 in the Jail at Ferozpur.

JAILS OF THE BENGAL PRESIDENCY, 1867.

XII.

DETAIL of the ADMISSIONS and DEATHS of the JAIL POPULATION of each PROVINCE.

(A Summary of the Annual Returns of the Jails of the Presidency.)

CAUSES OF ADMISSIONS AND DEATHS.	BENGAL PROPER AND ASSAM.		BENGAL PROVINCES, OUDH AND CAWNPORE.		NAGPORE AND CENTRAL INDIA.		AGRA, MEERUT, AND ROHILKUND.		PUNJAB.	
	Strength	Admissions	Strength	Admissions	Strength	Admissions	Strength	Admissions	Strength	Admissions
	Deaths		Deaths		Deaths		Deaths		Deaths	
	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.
Variola	56	1	55		5		3		7	
Varicella	270		3		6		1		14	
Morbili	4		1		2				1	
Tonsillitis	15		8				6		12	
Parotitis	65		8		10		18		21	
Febris Intermittens	8,385		4,718		3,413		1,503		5,930	
" Remittens	425		275		59		51		157	
" Continua	113		91		28		104		310	
Ophthalmia	188		327		108		65		154	
Erysipelas	12		14		2		1		7	
Erythema	1		1						1	
Anthrax	31		16		9		9		6	
Furunculæ			9		16		1		19	
Gangraena	25		27		2		1			
Dysentery	2,495		1,766		375		275		504	
Diarrhoea	2,475		1,623		427		382		500	
Cholera	263		232		3		46		76	
Rheumatismus	585		255		158		73		129	
Syphilis Primaria	164		181		74		25		54	
" Secundaria	78		123		21		27		58	
Iritis Syphilitica	5		1		3				3	
Gonorrhoea	75		53		14		7		14	
Phymosis	19		22		7		2		2	
Bubo	59		45		3		8		10	
Orchitis	18		20		6		2		1	
Stricture Urethrae	19		8						2	
Condyloma	7								7	
Lepra	52		21		10		3		2	
Elephantiasis	18		6						1	
Hydrophobia			1		2					
Scorbutus	67		48		6		2		79	
Bronchocele	7		2						1	
Aphtha	31		3		1				2	
Porrigi	2		3		2		2		6	
Scabies	650		318		140		55		59	
Verues	6		5				1		3	
" Tania	3		1						10	
" Dracunculus			3		37		1		53	
Anæmia	80		59		2				14	
Anasarca	119		20		1		1		7	
Carcinoma	3		2							
Lupus			2							
Scrofula	19		8						1	
Phthisis Pulmonalis	111		47		5		12		11	
Hæmoptysis	45		10		5		16		9	
Abscessus Psoanus	1						6			
Tuberculosis Mesenterica	1									
Morbus Coxæ	2									
Encephalitis			1						1	
Myelitis	1									
Meningitis	4		2		1					
Apoplexia	10		8		8		1		17	
Paralysis	20		13		1		9		8	
Tetanus	2		4						2	
Epilepsia	28		37		13		3		8	
Chorea	2						1		1	
Hysteria	3		2						1	
Delirium Tremens			2							
Mania	83		30		16		2		41	
Dementia	12		2		8					
Cephalgia	17		20		13		4		11	
Neuralgia	57		20		8		5		14	
Otitis	58		38		30		17		13	
Odontalgia	17		8		7		6		4	
Anaurosis	7		7				4		2	
Pericarditis	2		3				1			
Morbus Cordis			3						7	
Aneurisma	1									
Angina Pectoris	3						1			
Palpitatio	1									
Syncope	1									
Varix									1	
Phlebitis	8		1							
Epistaxis	8		1		4		1		5	
Laryngitis	10		1		2		2		2	
Bronchitis	326		117		120		60		141	
Pleuritis	69		29		46		71		39	
Pneumonia	268		56		54		36		76	
Asthma	58		67		7		8		8	

CAUSES OF ADMISSIONS AND DEATHS.	BENGAL PROPER AND ASSAM.		BEHAR, BENARES, GUDE, AND CANNORE.		NAGPORE, AND CENTRAL INDIA.		AGRA, MEERUT, AND ROHILKUND.		PUNJAB.	
	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.
Stomatitis	30		3		4		1		10	
Gastritis	15		1				1		2	
Enteritis	4		5		2		1		1	
Peritonitis	10		3		1		2		1	
Ileus	3		4						1	
Obstipation	170		175		30		1		25	
Colica	224		151		115		114		239	
Dyspepsia	298		210		88		33		136	
Singultus	1									
Hæmatemesia	5		1							
Melena	2									
Hæmorrhoids	74		50		17		14		19	
Fistula in Ano	9		5		1		2		3	
Hernia	13		3		2		3		5	
Splenitis	221		41		35		6		151	
Hepatitis	34		15		12		10		11	
Cirrhosis	2									
Icterus	62		28		9		15		13	
Ascites	20		2				3		2	
Nephritis	3		1		1		31*		3	
Ischuria	3		2		1		2			
Diuresis et Diabetes	6		1						1	
Hæmaturia	5						1		1	
Lithiasis	1		1							
Calculus	3		2							
Cystitis	3		4		1		2			
Enuresis					1					
Orethritis	27		8		9		9		11	
Hydrocele	51		12		3		1		1	
Leucorrhœa	1									
Prolapsus Uteri	1									
Paramenia	3		6		7				1	
Partus	9		22		4		1		12	
Abortus	3				6				1	
Hysteritis	1									
Lumbago			13		2		18		17	
Pleurodynia			3		4		1		2	
Arthritis	3				1					
Synovitis	23		4		4		1		6	
Periostitis	12		1							
Exostosis							1			
Caries	2		8		2					
Necrosis	6		5				1		1	
Contractura	2		1							
Urticaria	5		6		7		6		15	
Eczema	33		20		10		1		9	
Herpes	31		35		7		38		7	
Lichen									4	
Prurigo	4		1		1					
Impetigo	2		31		1		1		2	
Pomphigus			1							
Ecthyma	3		1							
Rupia	2									
Psoriasis	56		65		30		2		17	
Phlegmon and Abscess	739		1,171		559		448		530	
Whitlow	41		48		9		5		58	
Ulcer	739		710		620		220		357	
Tumour	7		7				3		10	
Atrophy and Debility	195		44		53		25		43	
Burning	39		19		7		18		13	
Dislocation	7		5				2		3	
Subluxation	17		24		8		3		1	
Fracture	28		92		9		40		17	
Contusion	265		327		202		83		108	
Contused wound	62		120		13		49		28	
Lacerated wound	103		42		16		12		40	
Amputation	1									
Poisoning	3				1				1	
Snake bite	1				2				3	
Suicide										
Punished	110		108		42		6		22	
Cause not specified			4		1					

* Of these admissions 30 are returned by the same Medical Officer.

JAILS OF THE BENGAL PRESIDENCY, 1867.

XII.

DETAIL of the ADMISSIONS and DEATHS of the JAIL POPULATION of each PROVINCE.

(A Summary of the Annual Returns of the Jails of the Presidency.)

CAUSES OF ADMISSIONS AND DEATHS.	BENGAL PROVINCE AND ASSAM.		BEHAR PROVINCES, OUDH AND CAWNPORE.		NAGPORE AND CENTRAL INDIA.		AGRA, MEERUT, AND ROHILCUND.		PUNJAB.	
	Strength	Admissions	Strength	Admissions	Strength	Admissions	Strength	Admissions	Strength	Admissions
	Deaths		Deaths		Deaths		Deaths		Deaths	
	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.
Varicella	56	1	55	...	5	...	3	...	7	...
Morbili	278	...	3	...	6	...	1	...	14	...
Tonsillitis	4	...	1	...	2	...	...	...	1	...
Parotitis	15	...	8	...	...	...	6	...	13	...
Febris Intermittens	65	...	8	...	10	...	18	...	21	...
" Remittens	8,385	...	4,716	...	3,413	...	1,503	...	5,930	...
" Continua	425	...	275	...	69	...	51	...	157	...
Ophthalmia	113	...	91	...	26	...	104	...	310	...
Erysipelas	183	...	327	...	108	...	65	...	154	...
Erythema	12	...	14	...	2	...	1	...	7	...
Anthrax	1	...	1	...	...	...	...	...	1	...
Furunculul	31	...	16	...	9	...	9	...	6	...
Gangrena	...	...	9	...	16	...	1	...	19	...
Dysenteria	25	...	27	...	2	...	1	...	...	...
Diarrhoea	2,495	...	1,766	...	375	...	275	...	508	...
Cholera	2,475	...	1,623	...	427	...	382	...	590	...
Rheumatismus	263	...	232	...	3	...	46	...	76	...
Syphilis Primaria	585	...	255	...	154	...	73	...	129	...
" Secundaria	161	...	181	...	74	...	25	...	54	...
Iritis Syphilitica	78	...	123	...	21	...	27	...	66	...
Gonorrhoea	5	...	1	...	3	...	...	...	3	...
Phymosis	75	...	52	...	14	...	7	...	14	...
Bubo	19	...	22	...	7	...	2	...	2	...
Orethritis	59	...	45	...	3	...	8	...	10	...
Stricture Urethrae	14	...	20	...	6	...	2	...	1	...
Condyloma	19	...	8	...	...	...	...	...	2	...
Lepra	7	...	...	...	...	...	...	...	7	...
Elephantiasis	52	...	21	...	10	...	3	...	2	...
Hydrophobia	18	...	6	...	...	...	...	...	1	...
Scorbutus	...	...	1	...	2	...	...	...	...	...
Bronchocele	67	...	43	...	6	...	2	...	79	...
Aphtha	7	...	2	...	...	...	...	...	1	...
Porriga	31	...	3	...	1	...	...	...	2	...
Scabies	2	...	3	...	2	...	2	...	8	...
Vermes	650	...	318	...	140	...	55	...	59	...
" Trinia	6	...	5	...	...	...	1	...	3	...
" Dracunculus	3	...	1	...	...	...	...	...	10	...
Anaemia	...	...	3	...	37	...	1	...	63	...
Anasarca	80	...	59	...	2	...	...	...	14	...
Carcinoma	119	...	20	...	1	...	1	...	7	...
Lupus	3	...	2	...	...	...	...	...	...	...
Scrofula	...	...	2	...	...	...	...	...	...	...
Phthisis Pulmonalis	19	...	8	...	2	...	12	...	1	...
Haemoptysis	111	...	47	...	5	...	16	...	14	...
Abscessus Psoanus	45	...	10	...	6	...	6	...	9	...
Tuberculosis Mesenterica	1	...	...	...	...	...	...	...	...	...
Morbus Coxae	1	...	...	...	...	...	...	...	...	...
Encephalitis	2	...	...	...	...	...	...	...	...	...
Myelitis	...	...	1	...	...	...	...	...	1	...
Meningitis	1	...	...	...	...	...	...	...	...	...
Apoplexia	4	...	2	...	1	...	...	...	...	...
Paralysis	10	...	8	...	8	...	1	...	17	...
Tetanus	20	...	13	...	1	...	9	...	8	...
Epilepsia	2	...	4	...	...	...	...	...	2	...
Chorea	25	...	37	...	13	...	3	...	8	...
Hysteria	2	...	...	...	...	...	1	...	1	...
Delirium Tremens	3	...	2	...	...	...	...	...	1	...
Mania	...	...	2	...	...	...	...	...	...	...
Dementia	83	...	30	...	16	...	2	...	41	...
Cephalgia	12	...	2	...	8	...	...	...	...	...
Neuralgia	17	...	20	...	13	...	4	...	11	...
Otitis	57	...	20	...	8	...	5	...	14	...
Odontalgia	56	...	38	...	30	...	17	...	13	...
Amaurosis	17	...	6	...	7	...	6	...	4	...
Pericarditis	7	...	7	...	...	...	1	...	3	...
Morbus Cordis	2	...	3	...	1	...	1	...	...	...
Aneurisma	...	...	3	...	...	...	...	...	7	...
Angina Pectoris	1	...	...	...	...	...	...	...	...	...
Palpitatio	3	...	...	...	...	...	1	...	...	...
Syncope	1	...	...	...	...	...	...	...	...	...
Varix	1	...	...	...	...	...	...	...	...	...
Phlebitis	...	...	...	...	...	...	...	...	1	...
Epistaxis	8	...	1	...	...	...	...	...	...	...
Laryngitis	6	...	1	...	4	...	1	...	5	...
Bronchitis	10	...	1	...	2	...	2	...	2	...
Pleuritis	328	...	147	...	120	...	66	...	141	...
Pneumonia	68	...	29	...	46	...	71	...	39	...
Asthma	266	...	56	...	54	...	36	...	78	...
	58	...	67	...	7	...	8	...	8	...

CAUSES OF ADMISSIONS AND DEATHS.	BENGAL PROPER AND ASSAM.		BENAR, BENARES, GODE, AND CAWNPORE.		NAGPORE, AND CENTRAL INDIA.		AGRA, MEERUT, AND ROHILCUND.		PUNJAB.	
	Admitted.	Dead.	Admitted.	Dead.	Admitted.	Dead.	Admitted.	Dead.	Admitted.	Dead.
Stomatitis	30		3		4		1		10	
Gastritis	15		1				1		2	
Enteritis	4		5		2		1		1	
Peritonitis	10		3		1		2		1	
Ileus	3		4						1	
Obstipation	170		175		30		1		25	
Colica	224		151		115		114		239	
Dyspepsia	299		210		88		33		136	
Singultus	1									
Hæmatemesis	5		1							
Melena	2									
Hæmorrhoids	74		50		17		14		19	
Fistula in Ano	9		5		1		2		3	
Hernia	13		3		2		3		5	
Splenitis	221		41		35		6		151	
Hepatitis	34		15		12		10		11	
Cirrhosis	2									
Icterus	62		28		9		15		13	
Ascites	20		2				3		2	
Nephritis	3		1		1		31*		3	
Ischuria	3		2		1		2			
Diuresis et Diabetes	0		1						1	
Hæmaturia	6						1		1	
Lithiasis	1		1							
Calculus	3		2							
Cystitis	3		4		1		2			
Enuresis					1					
Orethritis	27		8		9		9		11	
Hydrocele	51		12		3		1		1	
Leucorrhœa	1									
Prolapsus Uteri	1									
Paramenia	3		6		7				1	
Partus	9		22		4		1		12	
Abortus	3				6				1	
Hysteritis	1									
Lumbago			13		2		18		17	
Pleurodynia			3		4		1		2	
Arthritis	3				1					
Synovitis	23		4		4		1		5	
Periostitis	12		1							
Exostosis							1			
Caries	2		8		3					
Necrosis	5		5				1		1	
Contractura	2		1							
Urticaria	5		6		7		6		15	
Eczema	33		20		10		1		9	
Herpes	31		35		7		38		7	
Lichen									4	
Prurigo	4		1		1					
Impetigo	2		31		1		1		2	
Pomphigus			1							
Ecthyma	3		1							
Rupia	2									
Psoriasis	56		65		30		2		17	
Phlegmon and Abscess	739		1,174		559		448		530	
Whitlow	41		48		9		5		58	
Ulcer	739		710		620		220		357	
Tumour	7		7				3		10	
Atrophy and Debility	195		44		53		25		43	
Burning	39		19		7		18		13	
Dislocation	7		5				2		3	
Subluxation	17		24		8		3		1	
Fracture	28		92		9		40		17	
Contusion	265		327		202		83		103	
Contused wound	62		120		13		49		28	
Incised wound	163		42		16		12		40	
Amputation	1									
Poisoning	3				1				1	
Snake bite	1				2				3	
Suicide										
Punished	110		109		42		6		22	
Cause not specified			4		1					

* Of these admissions 30 are returned by the same Medical Officer.

SUMMARY FOR 1867.

DETAIL of the ADMISSIONS and DEATHS of the EUROPEAN and NATIVE ARMIES, and the JAIL POPULATION of the BENGAL PRESIDENCY.

CAUSES OF ADMISSIONS AND DEATHS.	ADMITTED INTO HOSPITAL, AND DIED IN AND OUT OF HOSPITAL.									
	EUROPEAN ARMY.		NATIVE TROOPS.						JAIL POPULATION.	
	Bengal Presidency.		Bengal Proper and Assam.		Upper Provinces.		Central India Force.		Punjab Frontier Force.	
	Average Strength 34,003 Admitted ... 47,733 Died ... 1,077		Strength ... 8,878 Admitted ... 12,677 Died ... 248		Strength ... 32,038 Admitted ... 43,543 Died ... 520		Strength ... 4,513 Admitted ... 4,800 Died ... 43		Strength ... 9,963 Admitted ... 13,661 Died ... 180	Average Strength 54,940 Admitted ... 58,885 Died ... 2,114
	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.
Variola	26	4	6	...	30	5	3	...	19	3
Varioloides et Varicella	5	...	3	...	31	...	6	...	4	...
Morbilli	13	...	...	...	12	1	2	...	3	...
Scarlatina	...	...	...	...	...	...	...	...	1	...
Tonsillitis	444	...	25	...	60	...	15	...	32	...
Parotitis	16	...	83	...	15	...	15	...	10	...
Fobris, Intermittens	12,313	25	5,376	25	23,049	58	1,796	...	7,066	...
Remittens	914	23	78	13	334	20	18	...	81	14
Continua	2,643	41	67	...	31	6	9	...	50	...
Ophthalmia	1,693	...	110	...	807	...	226	...	268	...
Erysipelas	38	1	4	...	13	...	6	...	5	...
Erythema	10	...	2	...	6	...	...	...	...	...
Anthrax	6	...	6	...	11	...	2	...	3	...
Furunculus	313	...	75	...	161	...	11	...	103	...
Gangrena	...	...	...	...	...	...	...	...	...	...
Pyemia	1	1	...	...	...	...	...	...	...	...
Influenza	200	...	...	...	...	...	...	...	...	...
Diphtheria	1	...	...	...	...	...	...	...	...	...
Dysentery	1,230	64	1,356	10	1,813	21	159	...	412	...
Diarrhoea	3,170	14	812	11	1,473	19	151	...	374	...
Cholera	724	150	82	3	100	84	20	...	75	...
Rheumatismus	1,945	3	439	4	1,523	10	107	...	230	...
Syphilis, Primaria	1,782	...	214	1	563	...	98	...	78	...
Secundaria	780	3	48	...	199	...	14	...	48	...
Iritis Syphilitica	32	...	...	...	3	...	1	...	1	...
Gonorrhoea	2,066	...	74	...	202	...	55	...	47	...
Bubo	504	...	75	...	227	...	24	...	44	...
Orchitis	148	...	33	...	102	...	15	...	15	...
Phymosis	25	...	13	...	13	...	1	...	3	...
Verruca	10	...	...	...	...	...	...	...	...	...
Condyloma	13	...	1	...	6	...	...	...	...	...
Lepa	...	...	4	...	7	...	1	...	...	...
Elephantiasis	...	...	...	...	...	...	...	...	...	...
Hydrophobia	1	...	...	...	...	...	...	...	...	...
Scorbutus et Purpura	32	...	34	...	20	...	3	...	10	...
Ebrietas	688	...	6	...	10	...	1	...	1	...
Bronchocele	...	...	9	...	2	...	...	...	...	...
Aphtha	5	...	2	...	3	...	2	...	1	...
Porrigio	9	...	1	...	7	...	...	...	...	...
Scabies	42	...	377	...	569	...	61	...	34	...
Vermes	9	...	3	...	3	...	...	...	...	...
Tenia	270	...	...	...	3	...	1	...	1	...
Dracunculus	...	...	11	...	96	...	210	...	61	...
Anemia	220	...	15	...	44	...	...	...	34	...
Anasarca	17	...	12	...	11	...	1	...	1	...
Scirrhus	6	...	1	...	2	...	...	...	...	...
Lupus	7	...	...	...	...	...	...	...	...	...
Podagra	1	...	...	...	...	...	...	...	...	...
Serofula	57	...	2	...	12	...	...	...	2	...
Phthisis Pulmonalis	257	...	9	...	37	...	2	...	10	...
Hæmoptysis	53	...	5	...	15	...	...	...	1	...
Abcessus Psoanus	2	...	...	...	...	...	...	...	...	...
Tuberculosis Mesenterica	1	...	1	...	...	...	...	...	...	...
Morbus Coxæ	...	...	...	...	...	...	...	...	...	...
Encephalitis	8	...	...	...	...	...	...	...	...	...
Meningitis	1	...	1	...	...	...	1	...	3	...
Myelitis	...	...	...	...	...	...	...	...	...	...
Apoplexia	189	...	2	...	21	...	1	...	8	...
Paralysis	63	...	5	...	39	...	3	...	7	...
Tetanus	1	...	1	...	1	...	...	...	...	...
Epilepsia	92	...	7	...	20	...	2	...	3	...
Delirium Tremens	134	...	...	...	...	...	...	...	...	...
Chorea	3	...	...	...	1	...	...	...	...	...
Hysteria	...	...	...	...	...	...	...	...	...	...
Mania	20	...	5	...	18	...	1	...	1	...
Monomania	7	...	...	...	5	...	...	...	...	...
Melancholia	4	...	...	...	...	...	...	...	...	...
Dementia	33	...	2	...	3	...	...	...	...	...
Cephalæa	358	...	40	...	110	...	14	...	28	...
Sciatica	16	...	...	...	...	...	...	...	...	...
Dyseceæ	26	...	1	...	6	...	...	...	...	...
Neuralgia	107	...	22	...	187	...	29	...	74	...
Odontalgia	5	...	7	...	12	...	...	...	16	...
Otitis	231	...	81	...	217	...	37	...	39	...
Anaurosis	5	...	3	...	8	...	...	...	2	...
Nyctalopia	...	...	6	...	17	...	1	...	1	...
Pericarditis	11	...	...	...	2	...	...	...	...	...
Morbus Cordis	306	...	2	...	11	...	...	...	1	...
Palpitatio	45	...	...	...	2	...	...	...	...	...
Aneurisma	27	...	1	...	3	...	...	...	...	...
Rupture of Aorta	...	...	...	...	1	...	...	...	...	...

CAUSES OF ADMISSIONS AND DEATHS.	ADMITTED INTO HOSPITAL, AND DIED IN AND OUT OF HOSPITAL.									
	EUROPEAN ARMY,		NATIVE TROOPS						JAIL POPULATION.	
	Bengal Presidency.		Bengal Proper and Assam.		Upper Provinces.		Central India Force.		Punjab Frontier Force.	
	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.
Syncope	10	...	...	...	7	...	...	...	...	1
Varix	19	...	...	...	1	...	1	...	2	1
Phlebitis	3	...	...	...	...	...	...	...	...	...
Epistaxis	21	...	2	...	2	...	...	...	2	17
Angina Pectoris	16	...	1	...	...	...	...	...	2	4
Laryngitis	8	...	6	...	7	...	2	...	11	17
Bronchitis	1,323	10	246	4	657	11	63	3	234	800
Pleuritis	144	1	26	...	88	2	15	1	45	254
Pneumonia	193	15	26	3	154	10	21	1	73	469
Asthma	14	1	26	1	74	...	5	...	17	149
Singultus	...	...	...	...	...	...	...	...	...	1
Stomatitis	25	1	3	...	12	...	5	...	1	46
Gastritis	21	3	1	1	...	...	...	...	...	27
Enteritis	6	2	...	...	5	2	2	...	1	14
Peritonitis	18	4	4	4	...	...	...	...	...	17
Obstipatio	102	...	10	...	39	...	20	...	27	401
Ileus	3	2	...	...	...	...	...	...	...	6
Hernia	37	1	4	...	18	...	1	...	4	26
Dyspepsia	1,146	...	150	...	307	...	80	...	102	765
Colica	368	...	105	...	699	2	49	...	262	843
Hæmatemesis	16	1	...	...	2	...	...	...	1	6
Melena	...	...	...	...	...	...	...	...	...	2
Hæmorrhoids	305	...	27	...	108	1	8	...	20	174
Fistula in Ano	41	1	2	...	15	...	1	...	5	20
Splenitis	219	...	103	7	229	...	6	...	63	454
Hepatitis	1,767	...	13	2	63	...	7	...	9	62
Cirrhosis	1	...	...	...	...	...	...	...	...	2
Icterus	161	1	16	...	25	...	9	1	6	147
Ascites	8	2	1	...	1	...	1	...	2	27
Chololithus	1	...	...	...	...	...	...	...	...	...
Nephritis	39	...	...	...	20	...	...	...	10	39
Hæmaturia	9	...	...	...	3	...	...	...	1	7
Ischuria	16	...	1	...	...	...	1	...	1	8
Enuresis	1	...	...	...	...	...	...	...	...	1
Diabetes	13	...	2	...	6	...	...	...	2	10
Cystitis	3	...	2	...	6	...	...	...	1	2
Lithiasis	120	...	2	...	14	...	2	...	6	29
Stricture Urethra	1	...	...	...	6	...	...	...	4	5
Calculus Vesicae	9	...	...	...	1	...	...	...	1	...
Varicocele	607	...	21	...	76	...	15	...	10	64
Orchitis	27	...	4	...	6	...	...	...	...	68
Hydrocele	1	...	...	...	...	...	...	...	...	...
Fungus Testis	...	...	...	...	...	...	...	...	...	...
Leucorrhœa	...	...	...	...	...	...	...	...	...	1
Prolapsus Uteri	...	...	...	...	...	...	...	...	...	1
Paramenia	...	...	...	...	...	...	...	...	...	17
Partus	...	...	...	...	...	...	...	...	...	49
Abortus	...	...	...	...	...	...	...	...	...	10
Hysteritis	...	...	...	...	...	...	...	...	...	1
Arthritis	31	...	2	...	17	...	3	...	1	4
Synovitis	64	...	1	...	17	...	6	...	6	37
Pleurodynia	42	...	8	...	10	...	...	...	7	10
Lumbago	120	...	37	...	216	...	10	...	117	50
Necrosis	7	...	2	...	2	...	...	...	2	12
Caries	20	...	1	...	5	...	...	...	3	13
Contractura	6	...	2	...	2	...	...	...	2	3
Periostitis	71	...	...	...	4	...	3	...	3	13
Exostosis	3	...	...	...	...	...	...	...	...	1
Skin Diseases	289	...	119	...	403	...	18	...	180	454
Phlegmon and Abscess	1,433	...	377	...	1,946	...	293	...	486	3,430
Whitlow	120	...	10	...	70	...	8	...	60	161
Ulcer	1,020	...	494	...	1,568	...	112	...	553	2,646
Tumour	18	...	5	...	9	...	0	...	6	27
Atrophy and Debility	457	...	106	...	186	...	38	...	26	380
Burning	61	...	37	...	80	...	25	...	24	96
Dislocation	30	...	1	...	24	...	1	...	8	17
Subluxation	709	...	71	...	253	...	32	...	31	53
Fracture	146	...	13	...	42	...	9	...	23	186
Contusion and Contused wound	1,817	...	545	...	2,420	...	297	...	746	1,253
Concussion of Brain	4	...	...	...	4	...	...	...	...	...
Incised wound	303	...	88	...	114	...	32	...	23	273
Gunshot wound	22	...	63	...	10	...	2	...	2	...
Amputation	7	1	...	...	...	...	...	...	...	...
Poisoning	1	...	3	...	4	...	1	...	2	5
Snakebite	1	...	...	...	7	...	2	...	2	6
Sulicide	1	...	...	...	1	...	...	...	1	...
Drowned	...	...	...	...	...	...	...	...	...	...
Asphyxia	...	...	...	...	...	...	...	...	...	...
Murder	...	...	...	...	1	...	...	...	...	...
Execution	...	...	...	...	...	...	...	...	...	...
Footsore	97	...	182	...	1,083	...	161	...	161	...
Punished	18	...	6	...	16	...	...	...	15	...
Cause not specified	25	...	37	...	...	...	...	...	...	280
Died absent from their Regiments	...	...	...	...	...	...	...	...	...	5

* In the Death Rolls of the Native Army five deaths are returned as suicidal.

EUROPEAN ARMY OF THE BENGAL PRESIDENCY, 1867.

Return shewing in contrast the Sickness and Mortality of Married and Unmarried Soldiers.

A.—MARRIED SOLDIERS.

[illegible]

Return for Married Soldiers—(continued.)

REGIMENT AND STATION.		AVERAGE STRENGTH OF MARRIED MEN.	TOTAL NUMBER OF DAYS SPENT IN HOSPITAL DURING THE YEAR.	AVERAGE NUMBER OF DAYS SPENT IN HOSPITAL BY EACH MAN.	ADMISSION RATE OF THE YEAR PER CENT. OF STRENGTH.	DETAILS OF STRENGTH ACCORDING TO AGE.					DETAILS OF DEATHS ACCORDING TO AGE.					TOTAL ADMISSIONS AND DEATHS DURING THE YEAR.	CAUSES OF ADMISSIONS AND DEATHS.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
						40 AND UPWARDS.					UNDER 20.						40 AND UPWARDS.					UNDER 20.					CHOLERA.	FEVER.	HEAT APOPLEXY.	DYSPEPSIA.	DIARRHOEA AND DYSENTERY.	HEPATIC AFFECTIONS.	HEART DISEASE.	PHthisIS PULMONALIS.	DISEASE OF LUNGS.	(PERITONITIS.	SCURVY.	SUICIDE.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
						30 to 34.	25 to 29.	20 to 24.	15 to 19.	10 to 14.	5 to 9.	Under 20.	30 to 34.	25 to 29.	20 to 24.		15 to 19.	10 to 14.	5 to 9.	Under 20.	Admitted	Died	Admitted	Died	Admitted	Died													Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died

SERAPORE	...	VIII Brig. D. Bat. R. Art.	18	264	14	111	...	3	10	4	1	...	...	1	{ Admitted Died	...	20	1	4	...	...	9	...	...	...	...	1	...
...	...	2-12th Regiment, Head Quarters	159	464	3	12	...	74	63	16	6	...	...	...	{ Admitted Died	...	19	...	4	...	...	1	...	2	...	...	2	...
CANNORE	...	7th Drag. Guards, Squadron	8	115	14	112	...	...	7	1	...	...	...	...	{ Admitted Died	...	9	...	4	...	...	...	...	...	...	...	...	...
...	...	101st Regiment	64	419	7	72	...	28	21	10	5	...	1	...	{ Admitted Died	...	46	...	11	...	1	...	6	2	3	2	1	2
ALLAHABAD	...	XXII Brig. A. Bat. R. Art.	15	231	15	113	...	...	6	6	3	...	1	...	{ Admitted Died	...	17	1	1	...	...	...	...	...	...	...	1	2
...	...	XXIV Brig. 4 Bat. R. Art.	8	2	...	12	...	...	3	2	1	...	...	...	{ Admitted Died	...	1	...	1	...	...	...	...	...	...	...	...	...
...	...	107th Regiment	83	981	12	120	...	20	32	21	8	2	...	3	{ Admitted Died	...	100	2	31	...	1	...	10	2	2	1	1	8
SHAHJEHANPORE...	...	36th Regiment, Head Quarters	56	664	12	184	...	7	29	18	2	...	5	3	{ Admitted Died	...	103	6	12	...	...	...	7	3	3	...	7	10
MORADABAD	...	36th Regiment (Left Wing)	31	240	8	120	...	...	4	13	10	4	...	1	{ Admitted Died	...	37	3	1	...	...	...	2	3	1	2	1	1
BAREILLY	...	XI Brig. F. Bat. R. Art.	13	151	11	115	...	1	2	2	7	1	...	...	{ Admitted Died	...	15	...	...	...	...	...	3	...	1	1	2	...
...	...	37th Regiment	78	1,294	16	97	...	39	17	18	4	...	2	1	{ Admitted Died	...	76	1	21	...	1	...	10	5	1	2	1	20
ROOKH...	...	79th Regiment, Head Quarters	30	412	14	99	...	...	14	12	3	1	...	1	{ Admitted Died	...	27	...	12	...	2	...	...	2	1	4	1	...
MEEHUT	...	A. Brig. A. Bat. R. H. Art.	21	97	5	62	...	4	10	4	3	...	...	1	{ Admitted Died	...	13	1	5	...	...	...	2	...	...	2	1	...
...	...	A. Brig. D. Bat. R. H. Art.	19	84	4	37	...	3	12	4	...	...	...	...	{ Admitted Died	...	7	...	1	...	...	1	...	...	...	...	1	...
...	...	XVI Brig. B. Bat. R. Art.	5	47	9	100	...	...	2	3	...	...	...	...	{ Admitted Died	...	5	...	...	...	...	...	...	...	...	1	3	...
...	...	XIX Brig. C. Bat. R. Art.	11	87	...	64	...	...	2	4	2	3	...	...	{ Admitted Died	...	7	...	1	...	...	1	...	...	...	...	1	...
...	...	XXIV Brig. 3 Bat. R. Art.	10	4	...	10	...	4	4	1	1	...	...	...	{ Admitted Died	...	1	...	...	...	...	...	...	...	...	...	...	...
...	...	Carried forward	1417	12,832	9	80	1	67	434	599	260	56	...	1017	{ Admitted Died	1138	23	237	...	330	12	143	55	516	15	53	94	3

Return for Married Soldiers—(continued.)

[illegible]

[illegible]

Return for Married Soldiers—(continued.)

[illegible]

[illegible]

B.—UNMARRIED SOLDIERS.

[illegible]

[illegible]

Unmarried Soldiers—(continued.)

REGIMENT AND STATION.	AVERAGE STRENGTH OF UNMARRIED MEN.	TOTAL NUMBER OF DAYS SPENT IN HOSPITAL DURING THE YEAR.	AVERAGE NUMBER OF DAYS SPENT IN HOSPITAL BY EACH MAN.	ADMISSION RATE OF THE YEAR PER CENT. OF STRENGTH.	DETAILS OF STRENGTH ACCORDING TO AGE.					DETAILS OF DEATHS ACCORDING TO AGE.					TOTAL ADMISSIONS AND DEATHS DURING AND YEAR.	CAUSES OF ADMISSIONS AND DEATHS.														
					Under 20.	20 to 24.	25 to 29.	30 to 34.	35 to 39.	40 AND UPWARDS.	Under 20.	20 to 24.	25 to 29.	30 to 34.		35 to 39.	40 AND UPWARDS.													
Brought forward	10,405	212,399	20	131	370	2346	4837	2030	727	95	3	29	88	41	23	4	{ Admitted 13,652 Died ... }	75	2873	24	297	341	1339	611	2448	164	79	413	276	41
BAREILLY	117	2,001	17	103	5	14	21	60	11	6	...	...	2	2	...	...	{ Admitted 121 Died ... }	2	18	1	3	...	8	5	16	3	1	3	3	...
	605	4,589	8	100	108	190	238	42	26	1	1	...	2	3	...	...	{ Admitted 607 Died ... }	1	97	1	6	...	71	34	108	2	4	...	55	2
ROOKEE	334	12,158	36	201	5	160	126	27	16	...	...	3	2	4	...	...	{ Admitted 673 Died ... }	...	317	...	6	2	23	17	37	4	9	2	...	...
MEERUT	126	3,219	25	171	4	70	42	7	3	...	...	3	2	1	...	...	{ Admitted 215 Died ... }	2	25	...	1	...	25	8	22	6	1	...	...	1
	118	2,477	21	135	...	47	36	24	11	...	...	...	1	...	...	...	{ Admitted 159 Died ... }	...	25	...	...	...	19	9	23	...	...	...	...	...
	122	2,423	20	150	3	60	35	13	11	...	...	1	2	...	...	...	{ Admitted 183 Died ... }	1	64	...	...	...	28	2	28	...	...	...	...	1
	123	2,271	18	116	1	40	38	19	20	5	...	...	...	1	1	...	{ Admitted 142 Died ... }	1	13	...	...	...	15	4	27	...	...	...	...	...
	53	835	16	124	...	12	26	6	8	1	...	...	...	...	...	...	{ Admitted 66 Died ... }	...	22	...	4	3	...	...	...	...	...	...	...	...
	384	9,074	23	154	4	45	182	128	16	9	...	...	2	1	1	1	{ Admitted 591 Died ... }	1	103	...	19	...	28	33	80	5	1	10	15	...
	601	6,780	11	168	101	94	168	214	24	...	9	52	24	22	11	...	{ Admitted 1,011 Died ... }	98	48	...	...	1	205	15	77	...	2	56	19	...
	52	1,034	20	166	...	17	9	21	4	1	...	...	...	2	...	...	{ Admitted 86 Died ... }	...	26	...	1	...	12	10	4	...	...	5	...	...
DELHI	280	7,859	28	201	...	97	174	8	1	...	...	2	4	3	...	...	{ Admitted 564 Died ... }	1	243	...	4	2	50	16	53	3	4	17	3	...

[illegible]

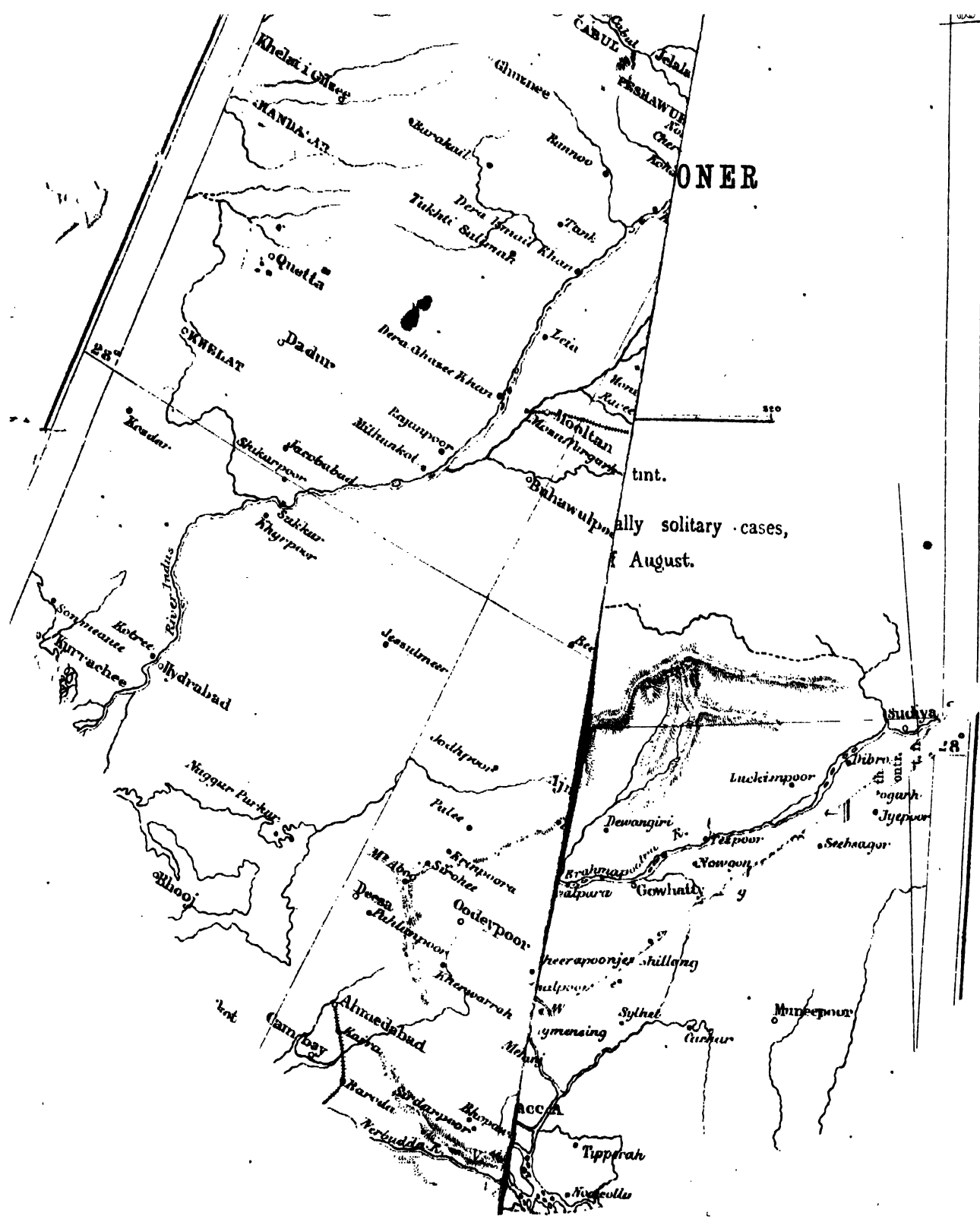
Unmarried Soldiers—(continued.)

REGIMENT AND STATION.	AVERAGE STRENGTH OF UNMARRIED MEN.	TOTAL NUMBER OF DAYS SPENT IN HOSPITAL DURING THE YEAR.	AVERAGE NUMBER OF DAYS SPENT IN HOSPITAL BY EACH MAN.	ADMISSION RATE OF THE YEAR PER CENT OF STRENGTH.	DETAILS OF STRENGTH ACCORDING TO AGE.						DETAILS OF DEATHS ACCORDING TO AGE.						TOTAL ADMISSIONS AND DEATHS DURING THE YEAR.	CAUSES OF ADMISSIONS AND DEATHS.													
					DETAILS OF STRENGTH ACCORDING TO AGE.						DETAILS OF DEATHS ACCORDING TO AGE.							CHOLERA.	FEVERS.	HEAT APOPLEXY.	DRUNKENNESS.	DELIRIUM TREMENS.	DIPHTHERIA AND DYSENTERY.	HEPATITIS.	GENERAL AFFECTIONS.	HEART DISEASES.	PNEUMONIA PULMONALIS.	DISEASES OF LUNGS.	OPHTHALMIA.	SCURVY.	ACCIDENTS AND INJURIES.
Under 20.	20 to 24.	25 to 29.	30 to 34.	35 to 39.	40 and upwards.	Under 20.	20 to 24.	25 to 29.	30 to 34.	35 to 39.	40 and upwards.	{ Admitted { Died ... } { Admitted { Died																			

SEALKOTE	{ F. Brig. B. Bat. } ... { R. H. A. ... }	115	1,571	14	131	...	20	68	19	8	...	...	1	{ Admitted	151	...	28	2	3	...	15	5	16	...	...	5	4
	7th Hussars	362	4,877	14	84	1	...	198	90	68	5	...	1	{ Admitted	304	...	81	...	...	...	17	13	31	1	...	19	4
	38th Regiment	933	18,822	20	162	40	220	330	228	100	6	...	3	{ Admitted	1,512	3	537	4	5	1	107	50	173	43	5	5	66		
MOOLTAN	{ XIX Brig. D. } ... { Bat. R. A. ... }	138	2,290	17	83	1	21	65	32	19	...	2	...	{ Admitted	114	...	25	2	...	...	9	10	18	...	1	3	4
	XXIV Brig. 1 } Bat. R. A. ... }	69	1,327	19	83	...	27	23	7	10	2	...	...	{ Admitted	57	...	7	...	...	...	7	2	21	...	2	...	...
	35th Regiment	614	5,404	9	60	25	176	214	135	61	3	...	...	{ Admitted	368	...	69	1	2	1	37	17	45	2	5	28	2
RAWUL PINDEE	{ F. Brig. D. Bat. } ... { R. H. A. ... }	116	2,013	17	172	1	39	43	23	8	2	...	1	{ Admitted	199	...	39	2	...	1	4	15	10	1	...	12	2		
	XIX Brig. B. } Bat. R. A. ... }	116	2,119	18	195	...	35	41	27	11	2	...	1	{ Admitted	226	...	46	...	4	...	10	20	16	2	1	5	2		
	88th Regiment	788	8,527	11	72	18	89	416	215	43	7	...	1	{ Admitted	570	...	255	...	11	2	35	13	102	...	3	37	2		
	3rd Batn. Rifle } Brigade ... }	957	19,810	21	93	4	106	528	228	91	...	...	3	{ Admitted	889	1	206	1	12	1	44	33	142	4	1	44	2
CAMPBELLPORE	20th Hussars	412	4,983	12	108	...	4	212	143	37	16	...	...	{ Admitted	443	...	79	2	11	3	14	1	19	4	1	9	1
ATTOCK	{ XXV Brig. 4 } ... { Bat. R. A. ... }	61	1,012	17	193	2	27	24	7	1	...	2	...	{ Admitted	118	...	37	2	...	...	16	5	...	...	...	...	...
NOWSHEERA	1-19th Regiment	798	9,350	12	147	19	161	361	194	60	3	...	4	{ Admitted	1,170	4	723	9	3	2	60	46	37	2	2	22	...		
PESHAWAR	{ F. Brig. E. Bat. } ... { R. H. A. ... }	141	3,395	21	255	8	42	43	29	19	...	...	4	{ Admitted	359	25	162	...	...	1	49	26	11	...	...	17	...
	F. Brig. F. Bat. } R. H. A. ... }	120	2,758	23	268	8	14	61	28	9	...	5	7	{ Admitted	322	15	167	...	...	...	39	16	7	1	1	4	...
	XIX Brig. E. } Bat. R. A. ... }	119	3,349	28	265	...	30	74	12	3	...	10	6	{ Admitted	316	26	158	2	...	...	35	10	10	...	5	19	...
	XXII Brig. 4 } Bat. R. A. ... }	37	788	21	270	2	6	15	9	4	1	...	2	{ Admitted	100	2	50	...	3	...	8	8	7	...	...	5	...
	Carried forward	27,332	518,220	19	139	1187	6253	11961	5660	1974	297	15	156	251	179	70	8	332	11,709	114	551	101	3297	1523	4938	334	181	1175	6

ONER

ally solitary cases,
August.



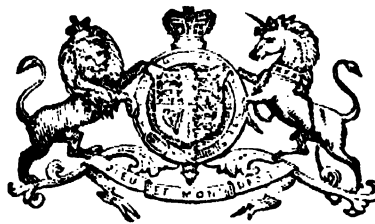
OF THE

Sanitary Commissioner with the Government of India.

1868.

WITH

APPENDICES CONTAINING RETURNS OF SICKNESS AND MORTALITY AMONG THE BRITISH
AND NATIVE TROOPS, AND ALSO AMONG THE PRISONERS IN THE
BENGAL PRESIDENCY FOR THAT YEAR.



CALCUTTA:

OFFICE OF SUPERINTENDENT OF GOVERNMENT PRINTING.

1869.

CONTENTS.

PART I. EUROPEAN TROOPS.

PARA.		PAGE
1	Average strength during the year	1
2	Average of twelve months accepted as the basis of calculation	<i>ib.</i>
3	Slight alterations required in the ratios of 1867	2
4	Death-rate of 1868	<i>ib.</i>
5	Chief causes of mortality	<i>ib.</i>
6	Ratio of deaths from each cause per 100 deaths	3
7	Mortality of 1868 compared with that of 1867	<i>ib.</i>
8	Mortality of 1868 compared with that of 1866	<i>ib.</i>
9	Deaths out of hospital in 1868	<i>ib.</i>
10	Chief forms of sickness in 1868	4
11	Admissions in 1868 compared with those of previous years	<i>ib.</i>
12	Monthly average admissions during the year	5
13	Average monthly sick-rate during the year	6
14	Deaths according to months	<i>ib.</i>
15	Liability of soldiers to sickness and death in each month	<i>ib.</i>
16	General characteristics of 1868	7
17	Results of 1868 in Bengal Proper	<i>ib.</i>
18	Excessive sickness and mortality at Berhampore	8
19	Excessive mortality among recruits in Chinsurah Depôt	<i>ib.</i>
20	Results in the second group	9
21	Results in the third group	<i>ib.</i>
22	Results in the fourth group	10
23	Results in the Punjab	<i>ib.</i>
24	Chief causes of sickness in different groups	11
25	Chief causes of mortality in different groups	<i>ib.</i>
26	Comparison between fevers in 1868 and 1866	12
27	Meteorology of Bengal Proper	13
28	Meteorology of the North-Western Provinces in 1868	14
29	Meteorology of the Punjab in 1868	21
30	Inefficiency from different diseases	22
31	Cholera in 1868	24
32	Order regarding record of movements on account of cholera issued during 1868	<i>ib.</i>
33	Cost of moving into camp in 1867	25
34	Doctor Bryden's report on cholera	<i>ib.</i>
35	Special investigation into the fungoid and other theories of cholera	<i>ib.</i>
36	Small-pox in 1868	27
37	Separate accommodation for small-pox cases	<i>ib.</i>
38	Fevers in 1868	28
39	Typhoid fever in 1868	<i>ib.</i>
40	Typhoid fever in 11th Hussars at Muttra	30
41	Typhoid fever in the 85th Regiment at Lahore Fort and Meean Meer	<i>ib.</i>
42	Typhoid fever in the 92nd Regiment at Jullundur	<i>ib.</i>
43	Typhoid fever in Kurrachee Depôt	31
44	Apoplexy in 1868	<i>ib.</i>
45	Dysentery and diarrhœa in 1868	<i>ib.</i>
46	Hepatitis in 1868	32
47	Delirium tremens in 1868	<i>ib.</i>
48	Fatality of different diseases	<i>ib.</i>
49	Venereal disease in 1868	<i>ib.</i>

52	Further measures required for prevention of venereal disease	...	...	...	...	35
53	Relation of age to mortality	...	...	...	...	<i>ib.</i>
54	Influence of length of service	...	...	...	...	37
55	Returns of married and unmarried soldiers	...	...	...	...	<i>ib.</i>
56	Comparative sickness and mortality among married and unmarried soldiers	...	...	...	...	38
57	Dr. Bryden's memorandum on the subject	...	...	...	...	39
58	Sickness and mortality among temperate and intemperate soldiers	...	...	...	...	41
59	Comparative sickness and mortality among different arms of the service	...	...	...	...	42
60	Causes of greater sickness and mortality among the artillery	...	...	...	...	45
61	Extent and causes of invaliding in 1868	...	...	...	...	46
62	Discrepancies between the sickness and mortality shown in Dr. Bryden's tables as compared with those of Army Medical Department	...	...	...	...	<i>ib.</i>
63	Comparison of stations in 1868	...	...	...	...	47
64	Comparison of regiments in 1868	...	...	...	...	48
65	Great sickness and mortality in convalescent depôts	...	...	...	...	<i>ib.</i>
66	Sickness and mortality among women	...	...	...	...	<i>ib.</i>
67	Sickness and mortality among children	...	...	...	...	49
68	Vital statistics of officers	...	...	...	...	<i>ib.</i>
69	Registration of deaths in military cantonments	...	...	...	...	50
70	Vaccination in military cantonments	...	...	...	...	<i>ib.</i>
71	Details of barrack accommodation	...	...	...	...	<i>ib.</i>
72	Progress of military works	...	...	...	...	51
73	Strength of troops in the hills	...	...	...	...	<i>ib.</i>
74	Employment of soldiers on public works	...	...	...	...	<i>ib.</i>
75	Military gymnastics	...	...	...	...	52
76	Soldiers' gardens and workshops	...	...	...	...	53
77	Analysis of water	...	...	...	...	54
78	Results of the analyses	...	...	...	...	<i>ib.</i>
79	Practical measures already adopted to improve water-supply	...	...	...	...	<i>ib.</i>
80	Method of storing cool water in wells	...	...	...	...	55
81	Best mode of keeping water sweet in tanks	...	...	...	...	<i>ib.</i>
82	Dr. Macnamara's filter for barracks	...	...	...	...	56
83	Entozoon in ration cattle	...	...	...	...	57
84	Cots and bedding for European troops	...	...	...	...	<i>ib.</i>
85	Dry-earth sewage	...	...	...	...	58
86	Introduction of glazed urinals	...	...	...	...	<i>ib.</i>
87	MacDougall's disinfectant	...	...	...	...	<i>ib.</i>
88	Tatties for European barracks	...	...	...	...	<i>ib.</i>
89	Monthly Sanitary Reports	...	...	...	...	59
90	Measurement of military buildings	...	...	...	...	<i>ib.</i>
91	Sanitary survey of stations	...	...	...	...	<i>ib.</i>
92	Suggestions of the Army Sanitary Commission	...	...	...	...	60
93	Sanitary progress in India	...	...	...	...	<i>ib.</i>
94	Changes in the constitution of the Sanitary Department	...	...	...	...	61
95	Report on the ten year period 1860-1869	...	...	...	...	<i>ib.</i>
96	Preparation of annual report	...	...	...	...	62
97	Improvements in statistical tables	...	...	...	...	<i>ib.</i>
98	Delay in submission of the report	...	...	...	...	63

PART II.

NATIVE TROOPS.

99	General statistics of regular Native Army for 1868	...	...	...	...	65
100	Mortality of the year	...	...	...	...	<i>ib.</i>
101	Chief causes of mortality	...	...	...	...	66
102	Chief causes of mortality in 1868, compared with those of previous years	...	...	...	...	<i>ib.</i>
103	Mortality according to months	...	...	...	...	<i>ib.</i>
104	Extent of sickness during 1868	...	...	...	...	67

PARA.		PAGE.
159	Duties of Sanitary Commissioners with local Governments and Administrations ...	97
160	Vital statistics of general population	98

APPENDIX

REFERRED TO IN PARA. 160 OF THE REPORT.

Letter to the Secretary to the Government of India, Home Department	...	i
Monthly Form A.—Station Daily Register of Births, Deaths, and Marriages	...	vi
Monthly Form B.—Births, Deaths, and Marriages registered in the Rural Circles	...	viii
Monthly Form C.—Deaths registered from different causes in the Rural Circles and Towns	...	x
Annual Form No. I.—Deaths registered in the different Rural Circles and Towns during the year	...	xii
Annual Form No. II.—Deaths registered in the different Rural Circles and Towns in each month of the year	... ..	xiv
Annual Form No. III.—Deaths registered from different causes in the Rural Circles and Towns	...	xvi
Annual Form No. IV.—Deaths registered according to Age in the Rural Circles and Towns	...	xviii
Annual Form No. V.—Deaths registered according to Classes in the Rural Circles and Towns	...	xix
Annual Form No. VI.—Deaths registered monthly from Cholera in the Rural Circles and Towns	...	xx
Annual Form No. VII.—Deaths registered monthly from Small-pox in the Rural Circles and Towns	...	xxii
Annual Form No. VIII.—Deaths registered monthly from Fevers in the Rural Circles and Towns	...	xxiv
Annual Form No. IX.—Deaths registered monthly from Bowel Complaints in the Rural Circles and Towns	...	xxvi
Annual Form No. X.—Comparative Statement of Births, Deaths, and Marriages registered in the Rural Circles and Towns	... ..	xxviii

ANNUAL SANITARY REPORT FOR 1868.

PART I.

EUROPEAN TROOPS.

THE strength of the European Force in the Bengal Presidency during the year 1868 has averaged somewhat less than what it did in 1867, and considerably under the number at which it stood during the years immediately previous. Since 1859, although the number of stations occupied by British Troops has undergone little change, the strength of the garrisons has steadily diminished—a fact which implies a generally increased space per head, and which should, therefore, not be lost sight of in comparing the sanitary results of the different years :—

<i>Year.</i>				<i>Average Strength.</i>
1859	...	...	...	55,104
1860	...	...	...	48,901
1861	...	...	...	44,879
1862	...	...	...	42,980
1863	...	...	...	41,351
1864	...	...	...	40,385
1865	...	...	...	37,210
1866	...	...	...	35,013
1867	...	...	...	33,784
1868	...	...	...	31,560

2. In calculating the ratios of deaths and diseases in 1867, the average strength for ten months only was adopted as the standard. Several thousand men had been withdrawn from the Presidency in the last weeks of the year, the season of smallest sickness and mortality, and it appeared, therefore, that more just rates might be obtained by deducing them from a strength of 34,603, the average of the ten months from January to October, than on 33,784, which was the actual average of the twelve. A similar argument might be employed and a similar procedure in consequence followed with regard to the vital statistics of 1868. During the earlier and healthy months of the year the strength was unusually low, and the new regiments and recruits had not fully arrived till the month of April. It is evident, however, that unless the average of the year be invariably accepted as the proper standard of calculation, no fixed rule can be followed, and the results deduced will be irregularly influenced from year to year. For 1868, therefore, the actual average of the twelve months, or 31,560 men, has been adopted as the basis for calculating the ratios of the year. The late arrival of many of the recruits in 1868 has an important sanitary bearing. Some of the drafts reached India so late that it was considered advisable to detain them at Kurrachee and Chinsurah till the return of the cold weather, and the mortality of young men

at both these depôts was very heavy. This matter will be further alluded to in a subsequent portion of this report.

3. The ratios of sickness and mortality during 1867 having been calculated, as already explained, on a strength of 34,603 in place of on 33,784, some slight alterations would be requisite in the figures of that year, so as to bring them into strict accordance with the standard which has been adopted in all the other years embraced in Dr. Bryden's Tables. But these alterations are so trifling in the case of nearly all diseases, being dependent on a difference in strength of only 819 men, that it will be more convenient to accept them as they stand.

4. During 1868, out of an average strength of 31,560, there were 635 deaths, including those which occurred both in and out of hospital, or a ratio of 20·11 per 1,000. Singularly enough this ratio corresponds exactly with the death rate among European Soldiers in 1866, and the results of 1866 and 1868, as will be seen from the following comparison, are the most favorable which have yet been attained :—

Year.	Ratio of Deaths per 1,000 of Average Strength.		
1859	45·35*
1860	36·77*
1861	45·93*
1862	28·11*
1863	25·08*
1864	21·10
1865	21·24
1866	20·11
1867	30·95
1868	20·11

5. Arranged according to the degree in which each contributed to form this death rate of 20·11 during the past year, the various diseases stand in the following order :—

					RATIO OF DEATHS PER 1,000.		
					1868.	1866.	1867.
DIED IN HOSPITAL.	Hepatitis	...	...	...	3·42	2·71	2·57
	Fevers	...	...	...	2·88	3·23	2·63
	Apoplexy	...	...	...	2·78	1·57	2·40
	Cholera	...	...	...	1·81	1·37	13·84
	Phthisis	...	...	...	1·55	1·57	1·36
	Dysentery	...	...	...	1·52	1·68	1·97
	Heart disease	...	...	...	1·36	1·00	1·16
	Respiratory diseases	...	...	...	·79	1·23	·84
	Delirium tremens	...	...	...	·38	·37	·40
	Diarrhoea	...	...	...	·19	·49	·40
	Wounds and Accidents	...	...	...	·16	·40	·29
	Atrophy and Anæmia	...	...	...	·10	·34	·17
	Dropsy	...	...	...	·03	·06	·14
	Scurvy	...	...	...	0	·09	·03
	Small-pox	...	...	...	0	·11	·12
	All other causes	...	...	...	1·68	2·20	1·62
Died out of hospital					1·46	1·69	1·01
TOTAL					20·11	20·11	30·95

* In Dr. Bryden's Tables of these five years, the ratio of deaths out of hospital is given separately. The total death rate from all causes is shown in the figures of this statement.

6. The relative mortality under each of the above heads is perhaps still more clearly seen by the annexed statement, in which out of every 100 deaths, the proportion due to each is shown :—

Ratio of deaths from each cause per 100 deaths.

Hepatitis	...	...	...	17·01
Fevers	...	...	...	14·33
Heat Apoplexy	...	...	...	13·86
Cholera	...	...	...	8·98
Injuries and deaths out of hospital	...	...	...	8·03
Phthisis pulmonalis	...	...	...	7·72
Dysentery	...	...	...	7·56
Heart diseases	...	...	...	6·77
Respiratory diseases	...	...	...	3·94
Delirium tremens	...	...	...	1·89
Diarrhœa	...	...	...	·94
Atrophy and Anæmia	...	...	...	·47
All other causes	...	...	...	8·50
TOTAL				100·00

7. The death rate of 1868 presents a remarkable contrast to that of 1867, both in the total and in the details of which this total is composed. A reference to the statement in paragraph 5, in which the death rates from each disease during 1867 have been added for convenient comparison, shows that in that year 30·95 out of every 1,000 British Soldiers died in the Bengal Presidency, while in 1868 the loss was only 20·11. The chief cause of this great difference will be found under the head of Cholera, which in 1867 proved fatal to 13·84 out of every 1,000 of strength and in 1868 to less than 2 per 1,000. The remarkable immunity from cholera, which British Soldiers enjoyed during the past year, will be referred to hereafter. The other items composing the death rates of the two years can be readily compared as they stand side by side in the statement and do not call for any special comment. Under no disease excepting cholera is there any very marked difference to be noted.

8. It has been already stated that the death rate of 1868 has been precisely the same as that of 1866—20·11 per 1,000, and it will be interesting to compare the items of which the total in each of these two years is made up. The details of 1866 have accordingly been placed side by side with those of 1868 in the statement already given in paragraph 5. The year 1866 corresponds with 1868 in having had a very small death rate from cholera, a ratio much below the average, and contrasting remarkably with the unusual mortality caused by the disease in 1867 which comes between. As regard other causes of death also, the ratios of the two years present many interesting points of analogy, the proportion of deaths under several headings presenting very small differences.

9. Out of the 635 deaths of 1868, 46 are entered as having occurred out of hospital. A reference to the third column of Table XIII shows the particular causes to which they were due. Fifteen men were drowned, eleven committed suicide, seven

Deaths out of Hospital in 1868.

died from accidents, five were suffocated when in a state of intoxication; there were two murders, two executions, two cases of Heat Apoplexy, one of Heart disease, and one of Asphyxia. It is right, however, to state that the division of deaths into those which occur in and those which occur out of hospital is not strictly followed. When the disease from which death has been occasioned has been accurately ascertained, the case is entered among the statistics of that disease. Where deaths from disease are given in Table XIII as having taken place out of hospital, as in the instances of Heat Apoplexy and Heart affection mentioned above, the evidence to show that the disease named was really the cause of death has been open to question. In this way the statistics of individual diseases are rendered as complete as possible, while doubtful cases are excluded. The fact whether a disease has proved fatal to a man when in or out of hospital is a matter of very secondary importance.

10. Having considered the general mortality of the past year and its causes both in themselves and as compared with the results of the two years immediately preceding it, the chief forms of sickness prevailing throughout the army require some notice. Arranged in the order of the proportion of admissions into hospital from each during 1868, the chief diseases stand as follow :—

DISEASES.	ADMITTED PER 1,000.		
	1868.	1867.	1866.
Fevers	462.4	465.7	468.3
Venereal diseases	199.2	166.6	217.7
Abscess and Ulcer	105.9	86.4	101.3
Wounds and Accidents	103.6	94.5	98.2
Diarrhoea	79.2	93.9	88.8
Respiratory diseases	70.9	66.2	81.4
Rheumatism	68.2	76.2	80.8
Hepatitis	51.0	52.8	60.7
Dysentery	34.9	36.9	40.2
Eye diseases	27.2	32.8	32.0
Phthisis	10.1	9.8	8.8
Apoplexy	7.6	5.8	3.2
Spleen disease	5.0	6.5	6.5
Delirium tremens	4.4	4.2	4.3
Cholera	2.7	20.9	2.3
Scurvy	0.8	1.0	1.8
Small-pox	0.4	0.8	0.8
All other causes	204.8	191.5	204.6
TOTAL	1438.4	1412.5	1501.7

It will be observed that more than one-half of the whole admissions during the past year were due to the three first diseases on the list, and that Fevers and Venereal affections together contributed 661 out of every 1,438 cases of sickness in each 1,000 of average strength.

11. In the statement which appears in the last paragraph the results of 1868 are compared with those of the two previous years. The similarity of the ratios in many instances is remarkable. During the three years, for example, the admissions from Fevers do not vary six in the 1,000. Similarly trifling are the variations as regards Dysentery, Eye diseases, and Phthisis. In the case of Delirium tremens the figures are almost identical. Cholera and Heat Apoplexy,

Admissions in 1868 compared with those of previous years.

on the other hand, present marked differences. The total admission rate of the year when compared with that of each of the preceding nine shows the following results :—

<i>Year.</i>	<i>Admissions per 1,000 of Average Strength.</i>			
1859	2228.5
1860	2051.5
1861	2045.6
1862	1970.8
1863	1838.4
1864	1641.6
1865	1605.3
1866	1501.7
1867	1412.5
1868	1438.3

Somewhat higher than they were in 1867 the admissions of the year present a favorable comparison with those of any one of the other nine years shown in the statement.

12. If the admissions be considered with reference to the different months in which they took place, it will be observed that the highest ratio, 168.2 per 1,000, was reached in June, and the lowest, 85.3 per 1,000, in February. In all the other months except February, it exceeded 100 per 1,000. In this respect the year presented a peculiarity, for, as will be presently shown, the admission liability of June is usually somewhat lower than that of several of the other months. The relatively high ratio of admissions in that month of 1868 was doubtless connected with the late appearance of the rains and the consequent trying nature of the season, and also to the fact that with a scanty rainfall the latter months of the year were more healthy than ordinary. These differences will be more apparent from the following statement, in which the monthly results of 1868 are compared with those of 1867 and 1866 :—

<i>MONTHS.</i>					<i>ADMISSIONS PER 1,000 OF AVERAGE STRENGTH.</i>		
					<i>1868.</i>	<i>1867.</i>	<i>1866.</i>
January	...	...	...	...	107*	98	110
February	...	...	...	...	85.	86	91
March	...	...	...	...	115	90	108
April	...	...	...	...	109	125	107
May	...	...	...	...	123	110	158
June	...	...	...	...	168	107	124
July	...	...	...	...	122	149	154
August	...	...	...	...	128	123	138
September	...	...	...	...	147	144	136
October	...	...	...	...	112	160	152
November	...	...	...	...	102	125	112
December	...	...	...	...	107	119	110
TOTAL				...	1,438	1,412	1,501

The ordinary ratio of the spring months was much disturbed in 1867 by the severe cholera epidemic which was chiefly prevalent at that period of the

year. It is also to be observed that the year 1866 partook somewhat of the same character as 1868, though not to the same degree.

13. Taking the average daily sick per 1,000 as the standard of comparison, the year commenced with 49 in January, the number subsiding somewhat in the next three months, again gradually rising till it reached 59 in September, and then falling to another minimum of 42 in December. These results correspond in a singular manner with those of 1866, when commencing with 49 per 1,000 in January, the sick rate rose to 69 in September and sunk again to 44 in December. The total average sick rate of 52 per 1,000 in 1868 is slightly more favorable than 53 in 1867, and much more favorable than the ratios of former years. During the last 10 years the daily sick rate has steadily diminished without any check from 90 per 1,000 in 1859 to 52 per 1,000 in 1868.

14. If the number of deaths in each month be examined, it will appear that 115 or more than one-sixth of the whole Deaths according to months. occurred in June, due, doubtless, to the excessive heat. Owing to the cholera epidemic no fair comparison can be drawn between these figures and those of 1867. In 1866 one maximum of mortality was reached in July and another in October, but the variations in the number of casualties in different months were not nearly so marked in that year as they have been in 1868. Considerable variations must occur in regard to the monthly death rate in different years, and the comparative healthiness of different months can be more fairly judged of by a comparison of the ratio of admissions and the average daily ratio of sick in each.

15. Two very interesting statements have been prepared by Dr. Bryden to show the ratio of liability of European Soldiers to sickness and death in each month. The calculation is based on the average of five years, but Cholera is excluded, as its course is so fitful and variable from year to year, and the statistics regarding it, if included in the total, would have altogether deprived the data derived from other diseases of their value.

Statement showing the comparative liability of European Soldiers to sickness in each month of the year.

						Totals of 5 years, 1864-68.	Ratio of admissions in each month per cent. of all admissions (taken on the average of 5 years).
January	...	...	...	...	...	18,750	6.87
February	...	...	...	...	...	16,089	5.90
March	...	...	...	...	...	19,657	7.20
April	...	...	...	...	...	21,683	7.95
May	...	...	...	...	...	26,300	9.64
June	...	...	...	...	...	25,758	9.44
July	...	...	...	...	...	26,337	9.65
August	...	...	...	...	...	26,678	9.77
September	...	...	...	...	...	25,350	9.29
October	...	...	...	...	...	25,651	9.40
November	...	...	...	...	...	22,007	8.07
December	...	...	...	...	...	18,618	6.82
TOTAL						272,878	100.00

Statement showing the comparative liability of European Soldiers to death in each month of the year.

						Totals of 5 years, 1864-68.	Ratio of deaths in each month per cent. of all deaths during the year.
January	...	...	...	...	...	211	6.28
February	...	...	...	...	...	159	4.73
March	...	...	...	...	...	170	5.06
April	...	...	...	...	...	191	5.69
May	...	...	...	...	...	219	7.11
June	...	...	...	...	...	422	12.56
July	...	...	...	...	...	369	11.88
August	...	...	...	...	...	326	9.70
September	...	...	...	...	...	317	10.33
October	...	...	...	...	...	330	9.82
November	...	...	...	...	...	275	8.19
December	...	...	...	...	...	281	8.35
TOTAL						3,360	100.00

From these figures it appears that on a series of years the admissions into hospital do not vary much during the six months, May to October, while in the other six the ratio is considerably less. As regards deaths more marked differences appear in individual months. June, July, and September, and in a minor degree August and October, are the most dangerous to life, presenting a decided contrast in this respect to the other months of the year.

16. The general characteristics of 1868 considered as a whole on the data given in Dr. Bryden's first Table are a small admission rate, a minimum proportion of daily sick, and a death ratio per 1,000 exactly the same as that of 1866—the most favorable yet recorded. The year is further remarkable for the unusual number of admissions and deaths in the month of June, the high ratio of mortality from Heat Apoplexy, the comparative freedom from Cholera which, as will be seen hereafter, was almost unknown over great part of the country, and the very slight prevalence of malarious disease in the later months of the year. Such are the chief facts regarding the sanitary history of the European Army in Bengal taken as a whole. With the results shown in the different groups (Tables II-VI), it will be necessary at the same time to consider the meteorological phenomena of the area over which each was distributed so far as they can be ascertained.

17. In the first group or that of Bengal Proper are included the stations of Fort William, Dum-Dum, Barrackpore, and Berhampore. The strength of European Soldiers in these garrisons during 1868 averaged only 2,059, and out of this number there were 59 deaths equal to a ratio of 28.66 per 1,000. The mortality was thus higher considerably, as will afterwards appear, than that of any of the other groups. Compared with 1867, in which the deaths equalled only 14.38 in these stations, the results are very unfavorable, but they will bear comparison with those of many of the other years with which comparison can be made. In 1862, 1863, and 1864, the death rate in this province varied from 20.60 to 26.45. In the other years between 1859 and 1866, it fluctuated between 28.92 and 50.98 per 1,000. Of the 59 deaths which occurred during 1868, 12 were from Dysentery, 11 from Cholera, 11 from Hepatitis,

and 9 from Fevers. With these exceptions, the fatal cases under each head were but few. The daily sick rate, 70·9, and the admission rate, 1,757 per 1,000, are considerably higher than the average of each for the whole army. These results are to be ascribed chiefly to the great prevalence of Fevers and of Venereal diseases. Of the first there were 571 admissions per 1,000 compared with an average of 461 for the whole Presidency, and of the second there were 307 per 1,000 compared with 199. The fact that 633 soldiers out of only 2,059 were treated for Venereal affections in Bengal Proper during the past year is very unsatisfactory, and shows that the lock-hospitals had not produced the beneficial effect so much to be desired.

18. A reference to Table VIII shows that these unfavorable results were found in their most exaggerated form among a small body of men at Berhampore. The ratio of daily sick here averaged 153, and the admissions 2,486 per 1,000 during a period of nine months. From Fevers alone at this station, as will be seen in Table IX, the admissions were at the rate of 1,605, and Venereal cases alone amounted to 272 per 1,000 of average strength. The mortality of 45·98 per 1,000 also was excessive, and in this are not included two casualties which occurred immediately after the wing of the regiment garrisoning the station had left, and which probably were due to its unhealthy influences. This excessive sickness and mortality may, doubtless, be accounted for in a great measure by the fact that the 2-25th Regiment in which it occurred had just landed in the country. If the total deaths in the wing stationed in Bengal be included—for some of the men were temporarily quartered at Barrackpore and Dum-Dum—the ratio of mortality rises to 52·34 per 1,000, and the fact becomes all the more instructive when this is compared with the death rate in the other wing occupying Shajchanpore, in which it amounted to only 22·63, or considerably less than one-half. In the Sanitary Reports of the Presidency Circle, the fevers prevailing at Berhampore are attributed to the “swampy nature of the country,” but it does not appear how far this evil is capable of remedy, or what measures have been adopted in order to mitigate it.

19. The danger of detaining soldiers in the Lower Provinces during the early years of service in India is forcibly illustrated by these data, and the fact also comes out very clearly from a consideration of the statistics of the Chinsurah Depôt during the past year. The men at this depôt were all recruits, and are not included in the strength of the province as shown in Table II. During the cold season they are constantly changing, as different drafts arrive and are passed up-country, and any statistics founded on the sickness and mortality occurring among them during the short period usually spent in depôt, would therefore disturb the general results as affecting men residing in the province throughout the year. During 1868, however, owing to late arrival in the country, nearly 300 recruits were detained at Chinsurah throughout the hot weather and rains, and the statistics of the depôt are in consequence very unfavorable. During the eight months from April till November, out of an average of 275 men, there were 21 deaths, most of them from Cholera. It is most desirable in a sanitary point of view that all recruits

should arrive as early as possible in the cold weather and be drafted from the Lower Provinces before its close.

20. In the second group, which comprises Darjeeling, Hazareebaugh, Dinapore, Benares, Fyzabad, Lucknow, Sectapore, **Results in the second group.** Futtehghur, Cawnpore, and Allahabad, the results were much more favorable than they were in Bengal Proper. Out of a strength of 7,438, the deaths were 20·97, and the daily sick 53 per 1,000. In this group as in the last, Cholera, Fevers, Dysentery, and diseases of the liver were chief causes of mortality, but another disease—Apoplexy—is more prominent than any of them. Of this affection no less than 45 cases were treated, and 28 of them proved fatal. The connection between their occurrence and extreme heat is clearly indicated by the fact that 37 out of the 45 took place in the months of June and July. The daily ratio of sick—53—and the admissions—1,318—per 1,000, as well as the death-rate—20·97—differ little from the general averages of the whole army for the year. Among the forms of sickness chiefly prevalent in this group Venereal diseases stand first, the admissions from this cause having been 254 per 1,000 compared with 241 from Fevers, which stand next. An examination of Tables VIII and IX shows remarkable variations both of sickness and mortality in the different stations included in this group. At the hill station of Darjeeling not a single casualty occurred among an average of 446; at Allahabad the death rate was 28·57 per 1,000, and very different ratios fill up the space between these extremes. In the same way the admissions fluctuated between 819 per 1,000 at Fyzabad and 1,848 per 1,000 at Allahabad. This marked difference is chiefly due to the prevalence both of Fevers and Venereal diseases in the one as compared with the other. At Fyzabad Fevers caused 112 cases of sickness per 1,000, at Allahabad 553: at Fyzabad, out of every 1,000 men, there were 176 admissions from Venereal diseases; at Allahabad there were 396.

21. Shajehanpore, Bareilly, Nynce Tal, Landour, Roorkee, Moradabad, Meerut, Delhi, and Muttra make up the third **Results in the third group.** group, and the garrisons of these stations averaged 4,582 men during the year. The death rate of 18·55 is much below that of 1867, a year of severe Cholera both at Meerut and Shajehanpore, and generally bears favorable comparison with the death rates of the last 10 years. In this group there was no death from Cholera during 1868, but two non-fatal seizures took place in Meerut, one in April and the other in August. Chiefly owing to unusual mortality under this head at the Nynce Tal Depôt, the death rate from Hepatitis in this group—7·20 per 1,000—is extremely high. Fevers contributed 3·27, and Apoplexy 2·40. The highest mortality from all causes in this group was 38·58 at the Nynce Tal Depôt, and the lowest 6·3 at Moradabad. This high death rate at Nynce Tal contrasts remarkably with the ratio of 9·71 at Landour. If the ratio of admissions into hospital in this group be considered, Fevers will be found first—or 322 per 1,000—followed by Venereal diseases with 186 per 1,000. At individual stations the total admissions varied from 2,000 per 1,000 during eight months at Nynce Tal to 715 during ten months at Moradabad. Fevers fluctuated from 348 per 1,000 at Meerut to 73 (for ten months) at Moradabad, and Venereal diseases, which averaged 53 per 1,000 at Landour during seven months, were 290

per 1,000 at Nynce Tal. The statistics of the convalescent depôts and the unsatisfactory results shown at Nynce Tal will be considered in a subsequent part of this report.

22. The fourth group embraces Agra, Morar, Gwalior, Seepree, Jhansie, Nowgong, Saugor, and Jubbulpore, and includes a force which averaged 4,170 men during 1868. In this group cholera was more prevalent than in any of the others, and proved fatal to 3·36 per 1,000. Although epidemic and appearing in four out of the eight stations, the disease was limited in extent and less fatal than it has usually been of late years to those attacked. Hepatitis and Heat Apoplexy were the only other diseases which contributed largely to the mortality, and the total death rate of 18·22 is favorable. At Agra the result was remarkably favorable, the ratio of deaths having been only 8·81. At Jubbulpore and Saugor it was over 28. The maximum admission-rate—1,989—was attained in Jhansie, and the minimum—918—at Gwalior. The admissions from Fevers which had been 837 per 1,000 in 1867, were only 533 in 1868, and Venereal diseases were reduced from 200 to 176 per 1,000. The admissions from Fevers at many of the cantonments continued high: at Jhansie, 998, at Seepree during 10 months 849, at Saugor and Morar, 692 in each. At Jubbulpore the admissions from this cause of only 380 per 1,000 presents a very favorable contrast to the returns of previous years. During the past cold season I inspected this station, and am satisfied that very much may be done to diminish the amount both of Fever and Dysentery which have prevailed at it. Good drainage works have been partially carried out, but a much more extended scheme is required, and I have no doubt that much good will result from adopting the practical suggestions which have been made for improving the cantonment. The swamps which surround it on three sides can be drained with great facility, and the black cotton soil, which is found here and in other stations of the Central Provinces, appears to be particularly well adapted for an experimental trial of sub-soil drainage. Omitting the stations occupied by small detachments, the admissions from Venereal diseases in this group have ranged between 153 per 1,000 at Agra and 189 at Jubbulpore.

23. The main body of the European Army, amounting to 12,576, was stationed in the Punjab, and occupied twenty-two stations, the names of which appear grouped together in the lower part of Table X. Within the whole of this large area not a single British Soldier was attacked with cholera, a remarkable contrast to the 476 admissions and 283 deaths from the disease in 1867. The death rate of the province—15·67 per 1,000—has been favorable. Of this Fevers caused 3·34, and Apoplexy 2·79. With these exceptions no single disease contributed two casualties per 1,000. The ratio of cases of sickness—1,498 per 1,000—was high, but the average proportion of daily sick—45—shows that many of them must have been of a comparatively trivial nature. Fevers numbered 516 per 1,000, and Venereal diseases 154. This latter ratio presents a favorable contrast with the statistics of the disease in any of the other groups, but the result is to be attributed more to the fewer facilities for contracting infection which appear to exist in the Upper Provinces than to a more efficient working of the lock-hospitals. The highest ratio of Fever cases—1,881 per 1,000—occurred at Lahore

Fort, and omitting hill stations and small detachments, the lowest, 263 per 1,000, at Sealkote. Venereal admissions varied from 201 per 1,000 at Peshawur to 74 at Nowshera. At neither of these stations have lock-hospitals yet been established.

24. Having briefly sketched the main characteristics of each group of stations as shown in 1868, the general results as regards sickness and mortality in all of them taken together may now be compared as shown in Table VII.

Chief causes of sickness in different groups.

These statistics may be conveniently tabulated in connection with those for 1866 and 1867. The contrast which exists between the results of 1868 and those of 1867 in several of the provinces may thus be seen, as well as the similarity between 1868 and 1866.

Statement showing the admissions per 1,000 of Average Strength from the chief diseases in the different groups.

YEAR.	Cholera.	Small-pox.	Fevers.	Apoplexy.	Delirium tremens.	Dysentery.	Diarrhoea.	Hepatitis.	Spleen disease.	Respiratory diseases.	Phthisis pulmonalis.	Scurvy.	Rheumatism.	Venereal diseases.	Eye diseases.	Abscess and Ulcer.	Wounds and Accidents.	All other causes.	TOTAL.
BENGAL PROPER.																			
1866	3.4	...	663	3.9	4.8	104	143	81	5.3	54	9.6	0.5	77	230	22	89	91	227	1,812
1867	3.1	...	341	2.5	11.9	71	125	76	10	76	9.3	0.6	79	245	16	118	139	348	1,677
1868	7.3	...	571	2.4	14.1	113	95	65	1.5	66	4.8	2.0	36	307	13	135	102	218	1,757
DINAPORE, BENARES, OUDE, AND CAWNPORE.																			
1866	4.7	1.3	308	3.0	4.3	52	81	64	6.4	63	8.9	1.4	74	306	44	99	88	194	1,407
1867	5.8	0.8	259	1.8	3.3	39	71	53	3.7	47	9.4	0.7	64	194	32	93	86	190	1,159
1868	2.4	0.2	241	6.1	4.6	36	69	49	4.3	57	8.0	0.2	76	251	28	114	116	248	1,318
MEERUT AND ROHILCUND.																			
1866	0.8	1.2	241	3.8	4.1	33	69	62	5.5	80	8.0	0.8	81	215	25	112	99	232	1,278
1867	3.3	2.3	324	2.3	4.2	39	103	60	6.9	75	1.2	2.1	123	193	50	90	82	211	1,417
1868	0.5	0.2	322	5.9	4.0	31	63	77	4.6	74	1.0	0.2	69	186	25	98	86	181	1,241
AGRA AND CENTRAL INDIA.																			
1866	0.2	...	877	3.0	6.5	44	131	51	6.5	88	6.3	1.2	90	209	33	101	104	237	1,992
1867	5.4	...	837	14	7.1	32	93	52	9.6	75	8.9	1.0	66	200	35	98	101	216	1,854
1868	5.8	1.9	533	4.3	4.8	19	57	57	5.8	63	16	0.2	63	175	30	107	118	172	1,439
PUNJAB.																			
1866	...	0.6	517	3.2	3.6	18	75	56	7.4	94	7.1	3.1	81	150	26	99	105	184	1,435
1867	35	0.7	567	7.8	2.7	29	103	45	6.8	69	7.7	0.9	68	111	28	71	97	154	1,496
1868	...	0.2	615	11	2.9	27	79	37	5.7	77	7.8	1.2	67	154	26	97	97	188	1,498

25. Taking the ratio of deaths in each province as the standard of comparison, the results are as follow. This information will be found in more detail in Tables II to VI than in Table VIII. Compared with 1866 the death rate in the Central Provinces shows the most decided diminution, having

Chief causes of mortality in different groups.

fallen in 1868 from 24 to 18 per 1,000, and this result is due to a greatly reduced death rate under Fevers and Dysentery. In Bengal Proper the ratio of deaths is nearly the same as it was in 1866. In the second group there has been a trifling decrease compared with that year, but in the other two the mortality has been somewhat higher in 1868 than it was two years ago :—

Statement showing the deaths per 1,000 of Average Strength from the chief diseases in the different groups.

YEAR.	Cholera.	Small-pox.	Fevers.	Apoplexy.	Delirium tremens.	Dysentery.	Diarrhea.	Hepatitis.	Spleen disease.	Respiratory diseases.	Heart disease.	Phtisis pulmonalis.	Dropsy.	Scurvy.	Atrophy and Anemia.	Wounds and Accidents.	All other causes.	Died out of hospital.	TOTAL.
BENGAL PROPER.																			
1866 ...	1.93	...	3.37	2.41	...	3.38	.96	3.86	...	3.37	.49	2.41	...	...	...	.96	4.82	.96	28.92
1867 ...	2.50	...	...	.62	.62	1.87	.62	5.00	...	.63	...	...	.63	...	.63	.63	.63	...	14.38
1868 ...	5.34	...	4.37	.97	.49	5.83	...	5.34	...	.49	...	.49	...	...	...	...	2.91	2.43	28.65
DINAPORE, BENARES, OUDE, AND CAWNPORE.																			
1866 ...	2.89	.11	3.98	1.40	.32	2.36	.43	3.33	...	.32	1.29	1.07	...	.22	.32	...	2.89	1.61	22.54
1867 ...	3.76	.31	1.57	.94	.52	1.25	.21	2.92	...	.21	1.15	1.15	...	.10	.10	.42	1.47	1.04	17.12
1868 ...	1.48	...	2.02	3.76	.27	1.35	.67	2.69	...	1.08	2.29	1.48	.13	...	.13	.13	1.61	1.88	20.97
MEERUT AND ROHILCUND.																			
1866 ...	...	.20	1.64	1.42	.41	.82	...	2.45	...	1.22	.82	2.24	...	...	...	.41	1.63	1.22	15.30
1867 ...	28.49	...	3.58	1.90	.63	3.58	...	1.47	...	1.25	1.48	1.48	.42	...	.21	...	2.11	1.06	48.66
1868 ...	...	...	3.27	2.40	.22	.66	...	7.20	...	.44	1.31	1.31	...	...	...	...	.43	1.31	18.55
AGRA AND CENTRAL INDIA.																			
1866 ...	.23	...	6.95	2.55	.70	1.39	.23	3.71	...	1.62	.70	1.16	.23	...	...	.93	1.16	2.55	24.11
1867 ...	3.30	...	3.06	4.24	.94	2.12	.71	3.06	...	.47	1.18	1.41	.24	...	...	...	1.88	2.12	24.73
1868 ...	3.36	...	1.20	2.40	.24	.48	...	3.60	...	.48	.95	2.16	...	...	.24	.48	1.68	.95	18.22
PUNJAB.																			
1866 ...	...	.15	1.97	1.21	.38	1.06	.53	1.90	...	1.21	.61	1.29	.08	.08	.30	.38	1.59	1.67	14.41
1867 ...	20.86	.07	2.87	3.24	.07	1.70	.52	1.92	...	.89	1.18	1.25	...	...	.07	.37	1.39	.74	37.14
1868 ...	...	...	3.34	2.79	.56	1.27	.08	1.83	...	.80	.95	1.03	...	...	.08	.16	1.59	1.19	15.67

26. Comparison has been made between the statistics of 1868 and 1866, as the general results, both as regards the ratio of sickness and mortality, correspond much more nearly than those of 1868 and 1867. The similarity between 1868 and 1866 becomes more striking when the monthly admissions from Fevers in each year are compared. Taking the monthly number of admissions from this class of diseases in each province during these two years the following results appear. At the same time there is also a contrast. In Meerut and Rohilcund, in both years, the maximum of fevers was reached in the hot months, and the same occurred in the Punjab. In 1868 the maximum was reached in the Oude and Cawnpore group in June, but in 1866 the greatest

Statement showing the Number of Admissions from Fevers in each Month of 1868 and 1866.

	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
--	----------	-----------	--------	--------	------	-------	-------	---------	------------	----------	-----------	-----------	--------

DINAPORE, BENARES, OUDE, AND CAWNPORE.

1868	...	44	62	102	112	145	279	277	216	250	138	95	74	1,794
1866	...	127	68	144	214	277	212	269	251	349	541	296	128	2,876

MEERUT AND ROHILCUND.

1868	...	65	27	65	99	148	204	178	174	170	98	110	139	1,477
1866	...	34	23	61	125	171	122	148	114	148	82	34	97	1,159

AGRA AND CENTRAL INDIA.

1868	...	181	114	105	134	167	271	261	211	270	200	170	142	2,226
1866	...	134	83	152	209	290	207	223	349	554	689	541	354	3,785

PUNJAB.

1868	...	364	192	250	367	934	1,357	723	795	763	693	694	605	7,737
1866	...	325	224	208	290	1,071	832	994	708	652	649	448	427	6,828

27. How far these various phenomena are capable of explanation by the meteorology of the different years in different parts of the country is a matter deserving of careful inquiry. It is very important that the chief meteorological facts of each year should be considered in relation to their vital statistics. In accordance with my request, Mr. Blanford, the Meteorological Reporter for Bengal, has favored me with the following memorandum on the characteristics of 1868. Owing to want of data regarding former years the comparison is restricted in great measure to Calcutta. As observations at other stations are accumulated, a more extended comparison will be possible, and we shall then be in a position to study the vital statistics of the province in connection with the atmospheric phenomena recorded :—

“The chief characteristics of the meteorology of Bengal during the year 1868 were a prevailing high barometric pressure, low temperature, and excessive total rain-fall. It would appear from the records of the Calcutta Observatory that notwithstanding this last feature, the mean atmospheric humidity was less than the average, and has been decreasing for the last 16 years. This observation would in any case apply to Calcutta only, and I have shown in my report that there are grounds for hesitating to accept this apparent change as an established fact.

“The excessive rain-fall was felt only in Lower Bengal, *i. e.*, the Gangetic delta and to the eastward, *viz.*, in the districts bordering on our Eastern Frontier. To the west and north-west there was a deficiency of rain-fall. The cause of this is not explicable with our present data, and must probably be looked for in the eastern part of Central Asia, where the prevalence of an unusually low barometric pressure would tend to draw the atmosphere to the eastward; and if the barometer were higher than usual (as compared with Bengal) in the North-Western Provinces, it might even divert from its usual course that portion of the monsoon which curving round from Bengal to the north-west usually brings the rains

to the provinces of the north-west. This can at present be put forward as a suggestion only. A comparison of the barometric pressures in Bengal, the North-Western Provinces, and at the Russian Stations in Central and Northern Asia during the monsoon months with each other and those of past years may not improbably throw light on the causes of the phenomenon.

"In Bengal, Calcutta is the only station which at present can furnish a continuous register for many years. A comparison of the principal meteorological elements of 1868 with their corresponding averages for the period of 16 years during which hourly observations have been recorded yields the following results :—

				BAROMETER.	THERMOMETER.	HUMIDITY.
				Mean 1868.	Mean 1868.	Mean 1868.
January ...	...	...	...	30·025 +·016	67·6 +0·7	71—4
February...	...	...	...	29·948 +·008	72·8—0·7	68—2
March ...	...	...	...	·859 +·026	80·5—1·	67—4
April ...	...	...	...	·757 +·017	84·5—1·4	69 +2
May ...	...	...	...	·655 +·109	86—1·7	73 +1
June ...	...	...	...	·543 +·009	84·9—1·3	81 +3
July ...	...	...	...	·536 +·048	83·5 +0·7	85 0
August ...	...	...	...	·592—·006	83— +0·3	86 +1
September	...	...	...	·634—·002	83·2—0·1	85 +1
October ...	...	...	...	·834 +·028	81·4 +0·8	78—4
November	...	...	...	·966—·003	74·7 +0·3	73—5
December	...	...	...	30·029 +·023	67·8 +0·9	72—5
MEAN ...				29·781 +·023	79·1—0·2	75·6—1·3

				RAIN-FALL.	
				Mean. 1868.	
January ...	...	...	...	0·11	—0·36
February ...	...	...	...	0·76	—0·58
March ...	...	...	...	1·13	—0·97
April ...	...	...	...	2·13	+ 3·34
May ...	...	...	...	5·78	+ 0·02
June ...	...	...	...	12·64	+13·97
July ...	...	...	...	13·19	—2·02
August ...	...	...	...	14·70	+10·13
September ...	...	...	...	10·94	+ 4·75
October ...	...	...	...	5·46	—3·93
November ...	...	...	...	1·09	—1·09
December ...	...	...	...	0·10	—0·10
TOTAL ...				68·33	+23·16*

"The wind directions of past years have not yet been sufficiently discussed to admit of a similar comparison.

"Thus it appears that the months of January, February, and March and October, and November were drier than the average both in point of invisible humidity of the atmosphere and in the amount of rain-fall; and that the excessive rain-fall of the year was due mainly to the very heavy falls in June and August."

28. From Dr. Murray Thomson, the Meteorological Reporter of the Meteorology of the North-Western Provinces, I have received the following "comparative summary of the weather in 1868 in the North-Western Provinces of India."

* These statements should be read in this manner,—the rain-fall in Calcutta during 1868 was 91·49, or 23·16 in excess of the average of 68·33.

In drawing up a comparative summary of the weather which prevailed in the North-Western Provinces of India during the several months of 1868, I regret that from want of more data I have been obliged to confine my remarks to the observations made at three stations, Roorkee, Agra, and Benares, and that within the last five years only. In doing even this I have had difficulty with the frequently occurring blanks, especially in the Benares Registers. I have no doubt also that some of the observations, particularly those of the earlier years, are not so correct as they should be. It will be understood that the language used applies only to the years and the stations under comparison : thus, when it is said that "in April the barometer was slightly higher in Roorkee and lower in Benares, and that the other weather elements were normal," it means that the barometer was higher in Roorkee and lower in Benares than it had been in 1864-65-66, and 1867, and that the weather of these years forming the rule, that of 1868 was in accordance therewith.

January.—The barometer at Roorkee was higher, so also was the humidity ; the temperature was a very little lower ; the rain-fall was the highest, but it was nearly equalled by that of 1866 ; the wind instead of being N. W., or still, was S. W., or still (calm). At Agra the barometer was about the average ; the humidity was higher than in 1864 and 1865, but less than in 1866 and 1867 ; the temperature exceeded that of 1864, but was lower than in the other years ; the rain-fall was the highest, except that of 1866. A variable wind was observed. In Benares the barometer was lower, and the humidity higher ; the temperature also, as far as it can be judged, was higher, and the rain-fall was exceeded by that of 1867 only. The wind was variable.

February.—The barometer was a very little lower at Roorkee ; the humidity higher ; the temperature was about the average ; the rain-fall was the highest ; the wind, instead of being N. W., or still, was N. W., S. W., or still. At Agra the weather in all its features was very like that of the other years. At Benares the barometer was lower, the temperature a little higher ; in other respects the weather was normal.

March.—At Roorkee the barometer was higher, except in 1865 ; the humidity was decidedly higher, and so was the rain-fall, although the latter was little above that of 1865 ; the temperature was much lower, and the wind was not unusual. At Agra the barometer was nearly normal ; the humidity less than all, except 1864 ; the temperature and rain-fall were about usual ; the prevailing wind was N., unlike the more usual, W. At Benares the data were deficient.

April.—The barometer was very slightly higher in Roorkee and distinctly lower in Benares ; the other weather elements were nearly normal at all the places.

May.—At Roorkee the barometer was a very little higher, the humidity and temperature were normal, the rain-fall, except that of 1866, when there was none, was the lowest, and yet the prevailing wind was the same as in 1865, when there was an unusually high rain-fall. The wind was then S. E., instead of the more usual N. W. At Agra, except in 1867, the barometer was slightly higher, the humidity much lower, although the rain-fall was the highest, except that of 1865 ; the temperature lower, and the wind with more northing in it than usual. At Benares the barometer was higher than it had been since 1864, the humidity lower, and the temperature higher than normal ; the wind, instead of the ordinary W., was very variable.

June.—At Roorkee the barometer was nearly normal ; the humidity in excess, but not much over 1867 ; the temperature lower, except in 1867, and the rain-fall the highest, except 1867 ; the wind partly that of the monsoon. It is so far instructive that, as often as the monsoon wind S. E. blew, there was rain, or the signs of it. In Agra the barometer stood higher but the humidity lower, and the temperature distinctly lower ; the rain-fall was the highest except that of 1867. In Benares the barometer was nearly normal, the humidity higher than 1864 and 1865, but lower than 1866-67 ; the temperature distinctly lower, and the rain-fall very high, nearly double that of 1867, which was also high. In the North-Western Provinces rain in the rainy season is usually associated with the E. or S. E. wind, but in 1868 with a high rain-fall at Benares the wind was often W., and it is still more remarkable that the wind was either W. or S. W. from the 13th to the 18th, when nine out of the ten inches of rain fell.

July.—At Roorkee the barometer was higher, the humidity decidedly lower, the temperature slightly higher, while the rain-fall was the lowest, excepting that of 1864. The wind was not quite usual, being more from the W. instead of S. E.; this was notably the case in the early part of the month. At Agra the barometer was slightly higher, the humidity distinctly lower, temperature higher, except in 1865. The rain-fall was much higher than that of 1864 and 1865, but two inches less than 1866, and very slightly less than in 1867. The wind was the not unusual E. At Benares the barometer was slightly lower, the humidity markedly lower, except that of 1864, the temperature about normal, the rain-fall was not one-half of that of 1865; it was four inches less than in 1867, but it exceeded those of 1864 and 1866.

August.—At Roorkee the barometer was slightly lower, the humidity distinctly lower and the temperature distinctly higher; the rain-fall very much the lowest, and the prevailing wind was W., or still, and not usual S. E., or still. At Agra the barometer was nearly normal, the humidity lower, except in 1864 and 1867, the temperature a little higher, the rain-fall the lowest, the wind was S. W., the usual being E. At Benares the barometer was slightly lower, the humidity decidedly lower, the temperature about normal, and the rain-fall the lowest of the four recorded years; the prevailing wind was W. and not the usual E. or S. E.

September.—At Roorkee the barometer was slightly higher, except in 1864, the humidity lower, the temperature higher, and the rain-fall the lowest, except that of 1866; the wind was the usual S. E. At Agra the barometer was slightly higher, except 1864, the humidity lower, and the temperature decidedly higher, the rain-fall the lowest, and the wind variable. At Benares the barometer was lower, except in 1867, the humidity lower than in 1867, the same as in 1866, and higher than in 1864 and 1865; the temperature was higher, the rain-fall was nearly the same as that of 1864, more than that of 1865, one inch less than that of 1866, and less than half of that of 1867; the wind was normal.

October.—At Roorkee the barometer was higher than in 1865 and 1866, but lower than in the other years, the humidity was less, and the temperature higher. In 1866 only was there any rain-fall, so that it was not abnormal in October 1868 to have none; this was also the case with the prevalence of calm days. At Agra the barometer was higher than in 1864 and 1865, but lower than in the other years; the humidity was decidedly lower, the temperature a little higher; there was no rain, but this was usual. At Benares the barometer was lower, the humidity lower, except in 1864; the temperature was usual. No rain and a W. wind were also what commonly obtain in October.

November.—At Roorkee, except in 1865, the barometer was lower and the humidity also, the temperature was usual, no rain was also usual; and an E. wind prevailing not unusual. At Agra the barometer and humidity were lower, and the temperature higher. No rain was usual, and a variable wind not unusual. At Benares the barometer was distinctly lower, the humidity also lower. No rain and a W. wind were normal.

December.—At Roorkee the barometer was higher than in 1864-65, but lower than in 1866-67, the humidity higher than in 1866; but lower than in other years; the temperature normal, the rain-fall lower, the prevalence of calm days also usual. At Agra the barometer and humidity lower and the temperature slightly higher; no rain was usual, and a variable wind not uncommon. At Benares the barometer was lower, but not much below that of 1864; the humidity the same as in 1864, but lower than in other years; the W. wind and no rain were quite usual.

Summary of the year 1868.—In the months of January, February, and March there was a tendency to higher air pressures, higher humidity, and rain-falls in the Upper Division of the North-Western Provinces, as represented by Roorkee; but these characteristics were not noticed at Agra, while at Benares, as far as air pressure was concerned, it was rather lower than in former years.

In the dry hot months of April and May there was again slightly higher air pressures in the Upper Division, but in the southern and eastern the tendency was rather to a lower

barometer. In other respects this part of 1868 was not unlike the corresponding period of former years.

It was in the rainy season that 1868 differed more especially from other years; not so much, however, in the early half of this season comprised in June and July for this, excepting that it had rather a long dry period, extending from the 18th or 20th of June on to near the middle of July, and in which the wind was often westerly and hot, was not far behind the same periods in previous years in point of rain-fall, temperature, and other features of the weather peculiar to the rains. It was in August and September when the difference was most seen; in these the rain-fall was very deficient, the mean temperature high, and the wind was westerly instead of easterly or south-easterly, or a calm altogether. The rains were more normal, and that uniformly through the four months, June, July, August, and September, in the eastern districts, than in the western or north-western. In October, although the humidity was still a little lower than usual and the temperature higher than usual, yet the weather was much like that observed in the Octobers of former years.

The later cold weather months, November and December, were a very little drier and warmer than in other years, but generally the weather was much as usual.

Statement showing the Meteorology of 1868 at Roorkee, Agra, and Benares compared with that of the four years previous.

STATION.	YEARS.	BAROMETER.		HUMIDITY.		TEMPERATURE IN SHADE.			Rain.	PREVAILING WIND.
		10	16	10	16	Max.	Min.	Mean.		
JANUARY.										
ROORKEE.	1864 ...	29.068	29.053	71	48	70	40	55	0	N. W. and calm.
	1865 ...	...	29.125	65	48	75	41	60	.30	Ditto.
	1866 ...	29.185	29.099	80	67	67	51	57	1.72	Ditto.
	1867 ...	29.190	29.094	60	43	75	51	60	.71	Ditto.
	1868 ...	29.194	29.110	69	54	69	44	56	1.89	S. W. and calm.
AGRA.	1864 ...	29.556	29.306	54	43	74	39	57	0	W. and O.
	1865 ...	29.558	29.453	57	51	79	47	63	0	Ditto.
	1866 ...	29.185	29.099	80	67	67	51	59	1.72	N. W. and O.
	1867 ...	29.559	29.458	70	66	76	46	61	.18	N. and E.
	1868 ..	29.535	29.426	64	48	69	45	58	.70	N. & W. & N. W.
BENARES.	1864 ...	29.964	29.765	49	37	...	39	...	.20	S. W. and W.
	1865 ...	29.933	29.851	54	42	78	46	62	.66	W. and N. W.
	1866 ...	.....	.....	...	...	...	...	...	0	.....
	1867 ...	29.940	29.852	59	56	...	...	61	1.30	W. and O.
	1868 ...	29.872	29.845	70	59	...	45	65	.72	N. W., N. E., and W.
FEBRUARY.										
ROORKEE.	1864 ...	29.100	29.004	62	45	74	44	60	1.67	N. W. and O.
	1865 ...	29.175	29.031	68	57	74	49	62	3.29	Ditto.
	1866 ...	29.114	29.006	67	50	73	45	59	1.25	O.
	1867 ...	29.099	29.014	56	41	75	48	63	2.10	N. W. and O.
	1868 ...	29.094	29.021	72	55	70	50	60	4.42	N. W., S. W., & O.
AGRA.	1864 ...	29.474	29.285	53	40	79	41	60	.95	W. and O.
	1865 ...	29.451	29.362	61	45	79	52	65	.00	Ditto.
	1866 ...	29.448	29.351	81	63	76	47	62	.00	W.
	1867 ...	29.477	29.383	70	63	83	47	69	.15	W.
	1868 ...	29.448	29.351	63	44	75	52	65	.15	W. and N.
BENARES.	1864 ...	29.823	29.731	46	36	...	49	...	.35	W. and N. W.
	1865 ...	29.848	29.755	59	43	80	54	67	.20	O.
	1866 ...	...	...	...	...	...	...	...	0	.....
	1867 ...	29.889	29.764	58	48	80	49	65	1.40	W.
	1868 ...	29.771	29.667	...	...	...	49	70	.15	W.

Statement showing the Meteorology of 1868 at Roorkee, Agra, and Benares compared with that of the four years previous,—continued.

STATION.	YEARS.	BAROMETER.		HUMIDITY.		TEMPERATURE IN SHADE.			Rain.	PREVAILING WIND.
		10	16	10	16	Max.	Min.	Mean.		
MARCH.										
ROORKEE.	1864 ...	29·020	28·948	54	29	85	51	68	·09	N. W. and O.
	1865 ...	29·114	29·006	60	47	80	55	68	4·28	Ditto.
	1866 ...	29·084	28·916	46	35	88	57	74	0·00	O.
	1867 ...	29·049	28·951	37	26	89	57	72	·72	O.
	1868 ...	29·094	29·021	72	55	70	50	60	4·42	N. W.
AGRA.	1864 ...	29·389	29·302	38	32	87	52	69	·01	W. and O.
	1865 ...	29·416	29·321	52	49	86	59	72	·35	W.
	1866 ...	29·371	29·279	72	49	92	60	76	·00	W.
	1867 ...	29·409	29·306	57	50	96	60	75	·08	S. E., S., and W.
	1868 ...	29·381	29·278	46	30	86	60	75	·10	N.
BENARES.	1864 ...	29·802	29·697	31	25	...	53	...	·20	W. and N. W.
	1865 ...	29·801	29·691	47	45	89	64	76	·85	W.
	1866 ...	...	...	...	...	...	...	...	...	...
	1867 ...	29·766	29·658	40	29	...	59	77	·19	E. and W.
	1868 ...	29·695	29·580	...	...	...	...	79	·00	W.
APRIL.										
ROORKEE.	1864 ...	28·903	28·802	35	25	98	63	80	·28	N. W. and O.
	1865 ...	28·916	28·814	45	36	98	67	83	·28	S. E. and O.
	1866 ...	29·096	28·821	36	25	95	61	78	·27	O.
	1867 ...	28·945	28·849	31	22	95	66	80	·52	W. and O.
	1868 ...	28·921	28·838	37	28	96	65	80	·30	O.
AGRA.	1864 ...	...	...	...	...	...	...	...	...	...
	1865 ...	29·579	29·395	38	28	105	78	91	·50	E.
	1866 ...	29·249	29·116	78	42	99	66	83	·00	W. and O.
	1867 ...	29·298	29·178	50	41	105	68	86	·22	W.
	1868 ...	29·272	29·147	33	22	99	72	87	·00	S. W. and O.
BENARES.	1864 ...	29·607	29·508	38	25	...	66	...	·00	W.
	1865 ...	29·622	29·495	38	28	105	78	91	·50	E. and N. W.
	1866 ...	...	...	...	...	...	...	...	...	...
	1867 ...	29·664	29·568	48	39	...	63	87	·00	W.
	1868 ...	29·553	29·442	...	...	...	...	87	·60	W.
MAY.										
ROORKEE.	1864 ...	28·867	28·780	40	34	101	71	86	·19	N. W.
	1865 ...	28·794	28·681	55	55	99	73	86	4·47	S. E.
	1866 ...	28·782	28·708	24	19	106	73	89	·00	N. W. and O.
	1867 ...	28·787	28·684	29	19	102	71	88	·65	Ditto.
	1868 ...	28·874	28·790	35	25	101	72	87	·13	S. E. and O.
AGRA.	1864 ...	...	...	...	...	...	...	...	...	...
	1865 ...	29·049	28·949	72	56	108	79	93	1·14	E. and O.
	1866 ...	29·072	28·981	83	44	111	77	90	·00	W.
	1867 ...	29·140	29·046	45	35	115	74	92	·07	N. W.
	1868 ...	29·179	29·073	29	19	105	78	87	·40	N. and N. E.
BENARES.	1864 ...	29·579	29·473	34	27	103	71	87	·00	W. and N. W.
	1865 ...	29·480	29·373	56	37	101	78	89	2·50	E.
	1866 ...	...	...	...	...	...	...	...	...	...
	1867 ...	29·416	29·318	43	37	110	75	89	2·40	W.
	1868 ...	29·502	29·404	29	19	105	78	94	·40	Various.

Statement showing the Meteorology of 1868 at Roorkee, Agra, and Benares compared with that of the four years previous,—continued.

STATION.	YEARS.	BAROMETER.		HUMIDITY.		TEMPERATURE IN SHADE.			Rain.	PREVAILING WIND.
		10	16	10	16	Max.	Min.	Mean.		
JUNE.										
ROORKEE.	1864 ...	28·663	28·567	43	28	109	77	93	1·60	N. W.
	1865 ...	28·671	28·581	47	37	107	78	93	1·20	O.
	1866 ...	28·633	28·545	47	42	105	80	93	3·91	N. W.
	1867 ...	28·695	28·617	55	50	98	76	86	8·05	S. E. and O.
	1868 ...	28·678	28·581	56	45	100	80	89	4·24	S. E. and W.
AGRA.	1864 ...	.....	.....	...	...	...	...	...	.....	.....
	1865 ...	28·934	28·859	72	51	111	86	99	1·55	W.
	1866 ...	28·979	28·885	78	54	110	85	97	·51	W.
	1867 ...	29·027	28·940	57	57	111	80	93	3·14	N. E. and N. W.
	1868 ...	28·996	28·898	51	39	101	82	92	2·20	Various.
BENARES.	1864 ...	29·364	29·257	35	26	109	82	95	0·00	N. W.
	1865 ...	.....	.....	44	29	110	85	97	1·10	N. W.
	1866 ...	29·224	29·152	66	55	...	79	...	2·10	E.
	1867 ...	29·323	29·239	81	78	107	78	88	5·30	E.
	1868 ...	29·325	29·224	56	51	100	79	90	10·10	W. and E.
JULY.										
ROORKEE.	1864 ...	28·641	28·550	72	59	98	79	88	10·30	S. E. and O.
	1865 ...	28·656	28·571	74	63	99	79	88	12·67	Ditto.
	1866 ...	28·682	28·596	78	69	94	78	86	12·22	S. E.
	1867 ...	28·677	28·605	79	71	92	77	84	13·39	S. E. and O.
	1868 ...	28·694	28·613	66	55	96	78	90	10·81	S. E. and W. and O.
AGRA.	1864 ...	28·923	28·833	65	61	97	80	83	2·94	E. and O.
	1865 ...	28·967	29·942	77	66	104	84	94	2·29	O.
	1866 ...	28·977	28·886	78	72	97	80	89	14·74	O.
	1867 ...	29·012	28·939	72	70	...	...	...	12·70	N. W. & N. & N. E.
	1868 ...	28·996	28·909	59	51	98	83	91	12·50	E. and O.
BENARES.	1864 ...	29·336	29·253	61	59	101	79	89	2·52	E. and W.
	1865 ...	29·365	29·249	71	76	97	80	88	23·80	E.
	1866 ...	29·396	29·314	72	69	...	78	...	6·6	E.
	1867 ...	29·288	29·220	74	66	103	77	85	13·60	E. and S. W.
	1868 ...	29·328	29·234	60	59	100	80	90	9·75	E. and W.
AUGUST.										
ROORKEE.	1864 ...	28·758	28·676	80	74	92	78	85	14·69	S. E. and O.
	1865 ...	28·736	28·691	78	75	93	78	85	13·36	Ditto.
	1866 ...	28·757	28·670	81	78	91	77	84	9·91	S. E.
	1867 ...	28·738	28·654	76	77	91	76	82	13·90	S. E.
	1868 ...	28·703	28·622	60	53	98	80	88	1·43	W. and O.
AGRA.	1864 ...	29·049	28·966	65	61	97	80	85	3·05	O.
	1865 ...	29·040	28·915	88	79	94	79	87	13·74	O.
	1866 ...	29·047	28·965	88	78	91	78	85	6·15	E.
	1867 ...	29·047	28·874	66	64	93	81	83	11·10	S. E.
	1868 ...	29·034	28·946	65	51	95	80	89	1·30	S. W.
BENARES.	1864 ...	29·457	29·378	68	68	95	74	85	5·10	E.
	1865 ...	29·437	29·355	70	67	97	80	88	8·55	E. and S. E.
	1866 ...	29·445	29·361	71	69	...	78	...	.....	E. and W.
	1867 ...	29·374	29·289	71	68	99	77	86	7·85	E.
	1868 ...	29·370	29·289	64	59	97	78	88	4·05	W.

Statement showing the Meteorology of 1868 at Roorkee, Agra, and Benares compared with that of the four years previous,—continued.

STATION.	YEARS.	BAROMETER.		HUMIDITY.		TEMPERATURE IN SHADE.			Rain.	PREVAILING WIND.
		10	16	10	16	Max.	Min.	Mean.		

SEPTEMBER.										
ROORKEE.	1864 ...	28·867	28·775	68	59	82	72	77	4·25	S. E. and O.
	1865 ...	28·834	28·751	72	66	91	73	82	9·71	Ditto.
	1866 ...	28·823	28·738	68	56	94	73	84	1·10	N. W.
	1867 ...	28·808	28·720	66	56	94	73	84	6·80	O.
	1868 ...	28·838	28·743	58	44	98	75	86	1·09	S. E.
AGRA.	1864 ...	29·168	29·080	61	61	95	74	84	1·57	O.
	1865 ...	29·143	29·061	87	73	91	75	83	6·78	W. and E. and O.
	1866 ...	29·144	29·062	89	70	91	78	85	6·15	E.
	1867 ...	29·133	29·033	56	49	92	77	85	1·20	N. W.
	1868 ...	29·160	29·054	56	41	98	80	89	·17	Various.
BENARES.	1864 ...	29·541	29·402	39	31	95	76	86	5·90	E.
	1865 ...	29·541	29·450	63	56	94	77	85	3·35	W.
	1866 ...	29·520	29·448	67	67	...	77	...	6·99	W.
	1867 ...	29·428	29·340	72	68	97	76	85	12·65	E. and W.
	1868 ...	29·469	29·368	67	65	98	76	87	5·85	E.

OCTOBER.

ROORKEE.	1864 ...	29·040	28·951	49	35	92	58	75	0	O.
	1865 ...	29·001	28·912	52	43	93	58	76	0	O.
	1866 ...	28·994	28·911	57	44	91	60	76	·62	S. E. and O.
	1867 ...	29·036	28·952	48	38	90	60	75	0	Ditto.
	1868 ...	29·025	28·978	36	27	94	60	78	0	O.
AGRA.	1864 ...	29·237	29·252	43	38	96	63	80	0	O.
	1865 ...	29·333	29·254	84	57	95	67	81	0	O.
	1866 ...	29·354	29·240	90	55	94	60	77	·08	O.
	1867 ...	29·360	29·270	53	40	89	66	78	1·02	Various.
	1868 ...	29·348	29·248	36	21	96	70	84	0	N.
BENARES.	1864 ...	29·739	29·648	39	31	95	62	78	0	N. W.
	1865 ...	29·810	29·684	48	37	...	75	...	0	W.
	1866 ...	29·711	29·624	49	43	...	69	...	0	W.
	1867 ...	29·692	29·587	55	50	94	66	82	1·70	W.
	1868 ...	29·667	29·575	41	35	94	60	83	0	W.

NOVEMBER.

ROORKEE.	1864 ...	29·211	29·121	53	43	84	49	67	0	O.
	1865 ...	29·118	29·027	55	45	83	46	64	0	O.
	1866 ...	29·152	29·078	49	49	84	48	66	0	S. E. and O.
	1867 ...	29·197	29·114	50	49	75	49	66	0	O.
	1868 ...	29·135	29·047	40	29	85	43	67	0	E. and O.
AGRA.	1864 ...	29·515	29·419	46	43	83	53	68	0	W.
	1865 ...	29·481	29·373	85	66	83	53	66	0	O.
	1866 ...	29·530	29·405	88	66	85	48	66	0	O.
	1867 ...	29·523	29·445	45	32	84	57	71	0	S. W.
	1868 ...	29·465	29·362	33	38	87	59	74	0	Various.
BENARES.	1864 ...	29·872	29·797	48	39	82	51	67	0	W.
	1865 ...	29·863	29·775	51	41	...	66	...	·15	W.
	1866 ...	30·044	29·698	44	38	...	57	...	0	W.
	1867 ...	29·838	29·777	55	45	...	53	...	0	Various.
	1868 ...	29·792	29·690	41	37	87	49	69	0	W.

Statement showing the Meteorology of 1868 at Roorkee, Agra, and Benares, compared with that of the four years previous,—concluded.

STATION.	YEARS.	BAROMETER.		HUMIDITY.		TEMPERATURE IN SHADE.			Rain.	PREVAILING WIND.
		10	16	10	16	Max.	Min.	Mean.		
DECEMBER.										
ROORKEE.	1864 ...	29.196	29.108	64	47	79	43	61	0	O.
	1865 ...	29.182	29.095	70	60	71	45	58	2.59	O.
	1866 ...	29.215	29.128	43	25	75	40	55	0	O.
	1867 ...	29.242	29.157	64	51	71	44	57	.62	O.
	1868 ...	29.211	29.116	56	42	74	44	58	.11	O.
AGRA.	1864 ...	29.530	29.431	52	47	77	46	63	0	O.
	1865 ...	29.594	29.563	86	74	74	48	61	.25	O.
	1866 ...	29.584	29.445	67	63	77	43	61	0	W.
	1867 ...	29.580	29.473	63	54	73	51	63	.50	N. W.
	1868 ...	29.541	29.430	53	34	76	50	64	0	Various.
BENARES.	1864 ...	29.893	29.824	46	38	78	47	62	0	W.
	1865 ...	29.925	29.835	61	44	...	56	...	.....	N. W.
	1866 ...	30.025	29.939	51	44	...	47	...	.....	E. and W.
	1867 ...	29.918	29.812	65	51	...	45	66	0	W. and N. W.
	1868 ...	29.880	29.772	47	37	79	42	61	0	W.

Meteorology of the Punjab in 1868. 29. Dr. Neil, the Reporter for the Punjab, thus summarizes the meteorology of that province for 1868:—

There were many points of importance in the meteorology of this province for the year under review, as compared with that of the previous year. In comparing the principal phenomena I have been led by these very phenomena themselves to divide each year into two periods, whereby I can more easily show the contrasts which distinguished so remarkably the general climate of the country during these two years. The divisions extend over six months, *viz.*, from January to July and from July to December. The difference between the rain-fall as well as the atmospheric humidity of the two years suggests this division. During the first six months of 1867 the rain-fall throughout the province generally was very scanty. At the same time it is worthy of notice that the month of May 1868 taken alone had not nearly such a heavy rain-fall as May 1867, in which cholera was widely spread over the Punjab. In May 1867 the fall registered at 32 stations totalled 65.9 inches; in May 1868 it was only 21.9. It seemed to be, as it were, reserved for the proper rainy season. In the same period of 1868, on the other hand, an unusual quantity fell, and this fall was shared by each month. For example, in April, May, and June 1868 more rain fell in the Punjab than may usually be expected during these months; in the present year (1869), these months, except in a few places, have been comparatively rainless. During the latter period of each year (1867 and 1868) matters were in a manner reversed. In July 1867 the rain began early, and was much more plentiful than during July 1868. Exceptions have to be made, however, in regard to some stations, *viz.*, those ranging along the north-eastern boundary of the province from Syalkot to Rawalpindi, where the rain was more abundant in the latter month. The direction of the wind being more steadily easterly in these stations during July 1868 accounts, no doubt, for the difference. The greatest difference in the amount of rain in the two latter periods was to be observed in the month of August. During this month of 1867 the rain-fall was very general and abundant. Not a day passed during which rain did not fall in some parts of the province, and altogether the fall averaged nearly five times more than that for August 1868. The wind was more steadily easterly also than during the latter period. There are no points to be observed during the remaining months of either period.

Temperature.—The annual mean temperature was altogether about 1° higher in 1868 than during 1867. During the early part of 1868, however, as rain was more frequent, the mean temperature in many places was considerably less, but from July to December it exceeded in most places that of the same period of 1867. The temperature in the sun's rays up to July

1867 was generally greater than during the same period of the following year, no doubt for the above reason; and for the same reason, during the later months of 1868, the temperature in the sun's rays exceeded that of the same period of the previous year.

From the month of January to the end of June there is a gradual increase in the monthly temperature, but the total increase reckoned for each month differs considerably, and this holds good for every year. In exceptional cases February shows nearly as low a mean temperature as January, but usually there is as much as 5° increase. The mean for March exceeds that of February by about 6° , that of April over that of March by about 12° or 13° , that of May over that of April by about 12° , that of June over that of May by about 6° , while that of July, on account of the rain, falls short of that of June by about 4° or 5° . In this case the mean maximum during the day is, of course, principally affected.

Wind.—During the cold months of both years the wind varied principally between W. and N. E., so far as can be gathered from the records. Southerly winds were the exception in most stations, and westerly winds, on the whole, most frequent up to the month of May, when easterly winds began to gain in frequency. On the Frontier, especially in Dera Ismail Khan, the wind would seem, during the first three months, to blow most frequent from a direction between north-west and north-east. From June to August the winds were mostly from an easterly direction, but varied very much. In the case of Multan, however, south-westerly winds were by far the most frequent during this period in both years. If the compass be divided by a radius drawn from west to east, it will be found from a comparison of the two years under review that during the colder months of the year the wind blows in the Punjab Province from directions included in the Upper Division, while the reverse maintains with regard to the hot months. In most of the stations the wind was more variable during 1868, after the month of May, than in 1867. To this circumstance and to the greater fall during the previous cold weather are probably due the scarcity of rain at the proper time in 1868. In Multan south-westerly currents seem to bring most rain. On the Frontier north-easterly, and on the eastern boundary of the province, easterly and south-easterly currents may be looked upon as the principal rain-bearers.

30. Before proceeding more particularly to consider one or two of the diseases which have chiefly contributed to sickness and mortality during the year, the relative degree of inefficiency which they have caused throughout the army may be referred to. In the annexed statement the average daily number of soldiers non-effective from Fevers, Bowel complaints, Hepatitis, Respiratory disease, Venereal affections, and "all other causes" are entered, and also the monthly and annual ratios of non-effectiveness due to each. This statement has been prepared from the numbers remaining in hospital at the end of each month, as given in the monthly statement of sick compiled in the Office of the Inspector General of Hospitals. The calculations are thus not absolutely correct, and the general results are somewhat different from those of the Annual Tables. The data, however, are approximately accurate, and sufficiently indicate what have been the great causes of inefficiency during the year, and what is the order of importance in which these causes stand. Venereal diseases occupy the first rank. From this cause 365 British Soldiers were on an average unfit for duty every day of the year. Next come Fevers with a daily sick list of 311, Bowel complaints with 98, Respiratory diseases 92, and Hepatitis 89. Compared according to ratios, 11.6 men per 1,000 were daily in hospital from Venereal; 9.9 from Fevers; the proportions due to other diseases being comparatively small. This statement forcibly illustrates the evil results due to Venereal disease, and how much still remains to be accomplished in carrying out the measures for its prevention.

Approximate estimate of the daily inefficiency caused by the chief diseases during 1868. (The calculations are made on the number remaining in Hospital at the close of each month.)

DISEASES CAUSING INEFFICIENCY.	NUMBER REMAINING IN HOSPITAL AT THE CLOSE OF EACH MONTH.												Average number ineffi- cent throughout the 12 months.	DISEASES CAUSING INEFFICIENCY.	REMAINING IN HOSPITAL PER CENT. OF STRENGTH.												Average daily inefficiency during the 12 months per cent. of strength.
	Jan., Str.	Feb., Str.	Mar., Str.	Apr., Str.	May, Str.	June, Str.	July, Str.	Aug., Str.	Sept., Str.	Oct., Str.	Nov., Str.	Dec., Str.			Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	
...	176	135	143	218	457	510	336	419	448	388	272	226	311	Fevers	66	48	48	67	140	156	102	126	136	119	84	70	99
Dysentery and Diarr- hoea	53	57	67	116	111	93	122	162	116	98	98	89	98	Dysentery and Diarr- hoea	20	20	22	36	34	29	37	49	35	30	30	27	31
Hepatitis	53	64	53	71	99	120	138	130	134	83	67	53	89	Hepatitis	20	23	18	22	30	37	42	39	41	25	21	17	28
Respiratory diseases	72	66	65	72	101	109	113	124	116	100	81	84	92	Respiratory diseases	27	23	22	22	31	33	34	37	35	31	25	26	29
Veneral affections	397	433	427	433	412	348	353	311	319	335	299	309	865	Veneral affections...	149	154	143	134	126	107	107	94	97	103	93	95	116
All other causes	525	494	565	634	620	736	768	757	760	643	569	558	635	All other causes	197	175	189	195	190	226	233	229	230	198	177	170	201
TOTAL REMAINING	1,276	1,249	1,320	1,544	1,800	1,916	1,830	1,903	1,893	1,647	1,386	1,314	1,590	TOTAL	479	443	442	476	551	588	555	574	574	506	430	405	504

31. The comparative immunity from Cholera which the European Troops enjoyed during 1868 has been already alluded to.

Cholera in 1868.

Only 87 cases and 57 deaths occurred throughout the year, compared with 722 cases and 479 deaths in the year previous. The distribution of the disease, according to months and stations, is shown, in Table XI, and it will be seen that it was almost entirely confined to the first, second, and fourth groups. In the Punjab there was not a single case, and in the Meerut and Rohilkund Districts there were but two, both occurring at the station of Meerut. The mortality from Cholera among the recruits at Chinsurah has been already mentioned, as well as the loss sustained from the same cause by the wing of the 25th Regiment at Berhampore. These two stations are both within the endemic area. Cholera appeared in an epidemic form at Lucknow and Jubbulpore, but in both the epidemic was of limited extent. Isolated cases also were admitted at other places in the second, third, and fourth groups. At Lucknow the disease commenced with a solitary case in April, followed by six in August, one in September, and one in December. Of these, seven were in the 102nd Regiment, one in the Artillery, and one the solitary case which occurred at the close of the year, in the 5th Lancers. Among women and children at Lucknow there were three cases and two deaths. At Jubbulpore 16 men were admitted and 12 died; 11 women and children were also attacked, and of these eight died. The disease was confined to the months of April, May, and June. From a special report on the epidemic at Jubbulpore, it appears that it first broke out among the married people of the 2-12th, whose quarters were overcrowded and deficient in ventilation. They were the nearest barracks to the regimental bazaar. Dr. Jardine is of opinion that the disease was "imported into Jubbulpore along the line of road, principally by working gangs of coolies, but partly, too, by vagrants and travellers, who were not pilgrims, nor returning from any fair." Facts, however, have not been cited in positive proof of this statement. The disease was of a very virulent type, 85·70 per cent. of those attacked having died. In all but one case there was premonitory diarrhoea.

32. The modification of the original orders regarding movement into

camp on account of Cholera which was made in 1868 was noted in last Annual Report (p. 143). As

Order regarding record of movements on account of cholera issued during 1868.

under this order only such buildings are to be vacated as have actually presented cases, it became necessary that a very careful record of the progress of the epidemic among the individual body of men, women, or children who occupied each building so vacated should be preserved, and the following supplemental General Order by the Commander-in-Chief, dated 30th July, was accordingly issued :—

"The following additions to be made to General Order No. 159, dated 9th May 1868, page 99—

In all cases where buildings have been evacuated on account of the appearance of cholera, a very careful record of the further progress of the epidemic among the individual body of men, women, and children who occupied each building so vacated is to be submitted on the disappearance of Cholera through the Quarter Master General for the information of His Excellency

the Commander-in-Chief and Government, prepared according to the annexed form :—

*Progress Report of Cholera at _____ in Her Majesty's _____
Regiment submitted in accordance with Government Order No. 246, dated 30th July 1868.*

STATION.	Corps.	Number or name of building.	Number and details of occupants.	Date of first case.	Date of evacuation of building.	Number of cases before evacuation.	Number of cases and deaths among these occupants after evacuation.

in charge. Surgeon,

Commanding Regiment.

33. In order fully to complete the history of the Cholera epidemic of 1867, it may be noted that the cost of the movements into camp consequent on the wide-spread prevalence of the disease in that year amounted to Rs. 1,23,216. The statement prepared by the Examiner of Commissariat Accounts shows that the extra expenditure was distributed over thirteen stations, the heaviest charges having been incurred at Peshawur, Meerut, and Meean Meer. In estimating the great losses occasioned by the epidemic this item should not be left out of consideration.

34. Dr. Bryden, the Statistical Officer, whose tables appended to the Annual Sanitary Reports have been such a valuable contribution to our knowledge of the extent and distribution of disease, has prepared a very careful review of the facts regarding cholera in the Bengal Presidency during the last 42 years, and a statement of the conclusions which he has formed with reference to them. This report is now being printed with the sanction of the Government, and will be ready for distribution in a few weeks. The facts which Dr. Bryden has collected with great labor present a mass of most useful and valuable information which has never before been placed on record. The statistics contained in the appendix to his report include the particulars of the disease among European and Native Troops since 1826 and among prisoners since 1835. Whatever opinion may be entertained regarding the deductions drawn from these figures, they certainly deserve most careful consideration, and the details themselves are of special interest and value.

35. At the suggestion of the Army Medical School at Netley, two Medical Officers, Drs. Lewis and Cunningham, who were first in their respective lists for the British and Indian Medical Services, were selected to conduct a special investigation into the mode of origin and spread of cholera in India. The points more particularly suggested for inquiry were the fungoid theory of the

disease advanced by Professor Hallier, of Jena, and the views entertained regarding the influence of the sub-soil water by Professor Pettenkofer, of Munich. In order that they might be made fully acquainted with these opinions, and with the best manner of conducting the investigation for testing their accuracy, Drs. Lewis and Cunningham, before proceeding to India, visited Germany and spent some days in interviews with Professors Hallier and Pettenkofer, and also with Professor de Barry at Halle. Since their arrival in this country in the early part of the year they have been in Calcutta, where there is ample opportunity of pursuing their inquiry for some time to come. Sanction has been accorded to the supply of whatever apparatus they require at the public expense, and they have been left to follow their own views and method of investigation, direction and advice being available both from the Medical and Sanitary authorities whenever sought for. The plan of operations which has been adopted is shown in the following memo. which the two inquirers have prepared. In a climate like that of Calcutta, scientific investigations are conducted with great difficulty, and it is only by a very patient and painstaking effort that these difficulties can be surmounted and reliable results obtained. Whether the results will prove of a positive or of only a negative character remains to be seen. The investigation is one of great interest and importance, and must give a new impulse to our study of Cholera in India :—

“On the 16th February we were summoned to attend a Meeting of the Heads of the Medical and Sanitary Departments convened for the purpose of deciding on the course to be pursued in initiating the investigation as to the cause of Cholera. It was then determined that the first point to be entered upon should be the German Fungal theory and the experimental evidence on which it is founded. At the same time it was considered advisable that steps should be taken to initiate observations on Pettenkofer's theory, by establishing observations and registrations of the sub-soil water level and its variations in and about Calcutta.

“We shall briefly state how far we have been able to pursue these investigations and what results have been obtained.

“I.—As to the German Fungal theory and its evidence—

“Owing to the delays necessarily involved in fitting up a laboratory with the necessary apparatus, &c., it was not until the middle of April that any systematic series of observations could be entered upon. Since that period continuous series of observations have been and are still in progress as to the asserted connection of Fungi with Cholera. These observations have consisted in careful and systematic examinations of Cholera evacuations and the changes taking place in them during decomposition as compared with healthy evacuations and the changes occurring in them, as well as in other fluids and solids, during the same process. These changes have been studied as occurring under various circumstances, associated with various substrata and media. In addition to the above experiments, others on the effects of Cholera evacuations on growing rice plants have been entered upon. Careful daily observations have been made, and notes and *camera lucida* drawings of all the changes observed to occur have been accumulated.

“As far as the observations have as yet gone, they have not been confirmatory of those of Hallier. For, though Fungi have frequently appeared on choleraic materials, yet—1st, several species have appeared; 2nd, the same species have occurred in abundance on other substrata in like circumstances; 3rd, the species observed have not belonged to the Cholera series of Hallier.

"As yet, however, it would be premature to draw any definite conclusions in the matter, as any series of observations on such points is beset with innumerable difficulties and fallacies, necessitating careful and frequent repetition of each experiment before coming to a final decision as to the value of its results.

"II.—In regard to the theory of Pettenkofer and its experimental trial—

"1st.—A regular series of observations and registrations of sub-soil water level has been instituted in various places in Calcutta and the neighbourhood.

"2nd.—The Meteorological Reporter to the Government of Bengal has arranged that observations on sub-soil water level and soil temperature be taken in various stations in Bengal.

"3rd.—The Sanitary Commissioner for Oudh has undertaken similar observations in four jails in that province, selected on account of their respective liability to and exemption from Cholera.

"In conclusion, we have gratefully to acknowledge the ready aid which we have received from all quarters to which we have had recourse in instituting these preliminary enquiries".

36. Only 14 cases of Small-pox occurred among the European Troops in 1868, and there was no death from the disease.

Small-pox in 1868.

In 1862 there were only 13 admissions from Small-pox, but two of them proved fatal. In 1858 there were 313 cases with 75 deaths, in 1859 122 cases with 18 deaths. Of late years the returns have been much more favorable, but the results of the past year are the most satisfactory of all. Referring to Table X, it appears that two of the cases occurred at Benares, three at Agra, and three at Jubbulpore. At the other places in which the disease appeared it was confined to isolated cases. During the eight months, April to November, no admission took place from Small-pox. These very satisfactory results, although apparently evidence of improved sanitary conditions, and especially of a more thorough protection by means of vaccination, cannot be altogether ascribed to these causes, but are also to a great extent illustrative of the peculiarly non-epidemic character of the year. During the last few months the disease has again been much more prevalent. Up to the end of April 88 cases and 9 deaths had been reported in the European Army of the Presidency during 1869.

37. The question of providing separate hospitals for the treatment of Small-pox patients has been under the consideration of the Government. During the last ten years

**Separate accommodation
for Small-pox cases.**

840 cases of the disease have been treated, but they have been spread over a large area, and the number occurring annually at any individual station has not been great. At Meerut the annual average has been 8.6, at Allahabad and Cawnpore 6.8 and 6.9, at Agra 6.3, at Umballa 5.7, and at Meean Meer 4.6. If these averages should be maintained, it will be advisable to keep up special quarters for the treatment of the disease at certain stations, and in some of them a spare building has already been devoted to the purpose. As a general rule, it does not appear to be necessary to provide special Small-pox hospitals; when no other arrangement can be conveniently made the patients can be treated in tents.

38. Fourteen thousand five hundred and ninety-four cases of fever were treated during the year. The maximum number of admissions took place in June, when they totalled 2,209, and the minimum in February 441. A reference to the comparative statement of admissions from various causes in the different groups given in para. 24 shows that the ratio has been highest in the Punjab, 615 per 1,000, and lowest in the second group, where they were only 241 per 1,000. The mortality, however, as shown in para. 25, did not follow the same order. It was highest in Bengal, or 4·37, and lowest in Central India, where it was only 1·20 per 1,000. In the consideration of Fevers, unfortunately the same exactitude in the statistics can not be secured as in other diseases. The different types even of malarious fever run into one another, and it is often difficult to distinguish the peculiar variety under which the cases should be entered. Moreover, under the common name of Fevers, diseases of very different natures are often classed together, and cases are returned as remittent which ought more properly to have been distinguished as “enteric” or “typhoid.”

39. During 1868 the number of cases of this “typhoid fever” has been considerable. It is impossible to state how many have occurred; but taking the death rolls no less than 35 are recorded, in which the nature of the disease was verified by *post mortem* examination showing the ulceration of Peyer’s glands. Out of the total of 91 deaths from fevers therefore, more than one-third are to be ascribed to the enteric or typhoid form of the disease. The liability of British Soldiers in India to this affection has not hitherto attracted the attention which it deserves. Dr. Bryden has for some years been impressed with the fact, and the statistics of 1868 fully bear out the opinions he has expressed with reference to it. On an analysis of the 35 fatal cases, it appears that the disease almost exclusively attacked young men—generally those who were in their first year of service in India—and that it was almost entirely confined to the hot season.

The ages of those who died were as follows :—

15 years	...	...	...	...	1
18 ”	...	...	...	...	2
19 ”	...	...	...	...	5
20 ”	...	...	...	...	5
21 ”	...	...	...	...	4
22 ”	...	...	...	...	1
23 ”	...	...	...	...	7
24 ”	...	...	...	...	3
25 ”	...	...	...	...	1
26 ”	...	...	...	...	2
27 ”	...	...	...	...	1
29 ”	...	...	...	...	1
31 ”	...	...	...	...	2
TOTAL					<u>35</u>

Of the 35 men who died 28 were thus under 25 years of age.

According to months the results may thus be abstracted :—

<i>Month.</i>	<i>No. of deaths in each month.</i>			
January	1
February	1
March	0
April	1
May	4
June	14
July	2
August	6
September	4
October	1
November	0
December	1
TOTAL				35

Of the 35 cases all but five proved fatal between May and September.

How much the disease was confined to recruits and new regiments in their first year of Indian service will appear from the following statement :—

Statement showing the ages at which deaths from Typhoid Fever occurred, and the stations, corps, and months in which they took place.

STATION.	Corps.	Months.	Age.	Number.	REMARKS.
Chinsurah	16-A. R. A.	February	23	1	Recruits.
"	22-7	July	23	1	
Barrackpore	7th Fus.	September	23	1	
Lucknow	102nd Regt.	June	23	1	First year in Bengal Presidency.
"	"	"	25	1	
Seetapore	8th F. R. A.	August	20	1	First year in India.
Shajehanpore	22-5th "	June	31	1	
Bareilly	8th D. "	August	20	1	Recruits.
Roorkee	79th Regt.	"	19	1	
"	"	January	18	1	First year in Bengal Presidency.
Muttra	11th Hussars	April	26	1	
"	"	June	29	1	
"	"	September	24	1	First year in India.
Jullundur	92nd Regt.	May	21	1	
"	"	June	21	1	
"	"	"	18	1	
"	"	"	23	1	
"	"	"	19	1	
"	"	"	15	1	
"	"	"	20	1	
"	"	"	20	1	
"	"	August	24	1	
"	"	October	19	1	First year in India.
Fort Lahore	85th Regt.	June	22	1	
"	"	"	19	1	
Meean Meer	"	May	19	1	
"	"	"	21	1	
"	"	"	31	1	
"	"	July	23	1	
"	"	August	21	1	
"	"	"	24	1	
"	"	September	27	1	
"	"	"	20	1	First year in India.
"	"	December	26	1	
Rawulpindee	1-6th Regt.	June	23	1	
TOTAL				35	

40. Special reports have been received regarding the prevalence of Typhoid fever in the 11th Hussars, the 85th, and 92nd Regiments. The Surgeon of the 11th Hussars, Dr. Vain, states that nine cases had occurred in his regiment, but that of these three had suffered from it at Mhow, where the disease had been prevalent among the men. He attributes its appearance "in the first instance to a lowered standard of health from long confinement on board, in an ill-ventilated and crowded transport, living for three months on salt rations, in some instances followed by scurvy, fatigue in marching through the jungle from Khundwah to Mhow, the men not being acclimatized; or, in other words, not knowing how to take care of themselves in a climate new to them, improper clothing at Mhow during the rainy season, breaking up fresh soil for garden ground to the windward of the Mhow Barracks in black soil, and faulty situation of the horse lines as regards the barracks during the monsoon, the emanations from the lines being necessarily borne into the barrack-rooms by the wind. Latterly the hospital itself at Mhow became a centre of pestilence and had to be abandoned." The disease he believes to have been imported from Mhow into Muttra. Every precaution was taken to prevent its propagation by disinfecting the evacuations of all who were suffering from it and by subjecting the barracks and hospital to fumigation.

41. The 85th Regiment, which arrived at Meean Meer on the 5th of April 1868, is largely made up of recruits and young soldiers, and it will be observed that 11 cases of Typhoid fever occurred among them. The Surgeon, Dr. Skeen, was inclined to attribute the disease to the water, but there was no evidence of its being in any degree polluted. Free ventilation, isolation of the affected patients, and disinfection of discharges were carefully attended to. It should be stated that the report of the outbreak in the 85th Regiment was written when only four of the cases had occurred, and no particulars have since been obtained.

42. In the statement which has been given in paragraph 39, 10 deaths from Typhoid fever are entered as having occurred in the 92nd Regiment. The number of cases is given as 17, but Dr. Munro, the Deputy Inspector General of Hospitals, is of opinion that these represent only the severe cases. Shortly before embarking for India 135 recruits had joined the corps, whose average age was but 19 years and 2 months, and most of whom were pale and sickly looking. On the passage out there was much sickness among the children, and Diarrhœa was prevalent. Dr. Munro is of opinion that in spite of all the care that could be taken, the air must have become contaminated from these discharges, and that "the conditions under which enteric Typhoid fever was likely to be developed were present on board the ship." On the passage up the Indus the women and children were placed below decks, and the men occupied the deck above them. Diarrhœa still continued among these children; it then began to affect also both men and women. Dr. Munro's conclusions are thus summed up:—"I think," he writes, "I may conclude that the Typhoid enteric fever originated within the regiment itself, and that it supervened on an outbreak of Diarrhœa which commenced on board ship amongst the young children, extended from them to the larger children and women,

and lastly to the men, and to the young men, especially, to which class Typhoid enteric fever has been almost exclusively confined." The particulars with regard to the outbreak of this disease in individual regiments are of much interest; but in considering the question which is one of great importance in reference to the health of the army in India, the statistics must be regarded from a general point of view. It must be borne in mind that the disease was not confined to any particular station or regiment, but that it appeared almost exclusively among young men recently arrived in the country. The subject will not be lost sight of, and in next Annual Report an attempt will be made to collect all the facts bearing on it which can be gathered from the history of previous years.

43. Before leaving the question for the present, it should be mentioned that Typhoid fever also proved very fatal among the recruits for this Presidency, who, owing to their late arrival in the country, were detained at the Kurrachee Depôt during the hot weather and rains. Nine of them died from this cause, all young men under 24 years of age. Three were 20, one 21, three 22, and two 23. If these deaths be added to those already tabulated, the results, as regarding age, become even more striking than before. Out of the total of 44 casualties from Typhoid fever all but seven occurred in men under 25.

44. But if Typhoid fever be specially a disease of young soldiers, Apoplexy—and in this country nearly all these cases may be taken to mean Heat Apoplexy—is peculiarly fatal to the old. During 1868 no less than 241 admissions into hospitals were due to this cause, and of these all but 14 were admitted in the months of June, July, August, and September. The maximum of 114 in any one month occurred in August. The variations in the ratio of seizures in the different groups is worthy of notice. With a minimum of 2.41 per 1,000 in Bengal Proper, they rose to a maximum of 11 in the Punjab. In this last province 144 cases were treated; of these 144.91 occurred in troops marching to the frontier campaign in August, but of these only 13 ended fatally, a ratio of loss much below that generally due to the disease. Doubtless many of those entered as laboring under Apoplexy were suffering only from solar exposure in a minor degree combined with the effects of fatigue. The unusual prevalence of Heat Apoplexy must be regarded as one of the chief features in the sanitary history of the year. The ages of those who died from Apoplexy present a remarkable contrast to those of the men who died from Typhoid fever. Of the 92 deaths from Heat Apoplexy returned in the age statement, only 16 were under 25 years of age. The ratio of mortality from this cause is nearly double among the older men, as will be seen on reference to the statement to be given in a succeeding paragraph.

45. Fifty-four deaths were due to Dysentery and Diarrhœa, 48 being caused by the one disease, and only six by the other. The ratio of admissions from the first has been 34, and from the second 79 per 1,000; the total mortality of the two together been 1.71 per 1,000. The most favorable result in previous years was a death-rate of 2.17 in 1866. The returns of 1868 under this head are thus very satisfactory. The same influences which are favorable to

Apoplexy and heat fevers, a high temperature and a dry atmosphere, would appear to diminish bowel complaints. This view of the case is supported not only by the general facts of the year, but also by the details of which these are composed. In Bengal Proper, where the year was one of heavy rain-fall, the admission-rate and death-rate from this class of diseases were high. In the next group also the difference is not very marked. In the other groups where the temperature was excessive and the rain-fall much below the average, the mortality was extremely small. In the third group only two men died from bowel complaints, or $\cdot 66$ per 1,000. In the fourth group there were but two fatal cases, or $\cdot 48$ per 1,000. In the Punjab, out of a force of 12,576, there were 17 deaths, or a ratio of $1\cdot 35$ per 1,000.

46. The next disease, one which always occupies a very high rank, and which in the past year heads the list as a cause of mortality, is Hepatitis. In its two forms, acute and chronic, 1,611 cases occurred, and of these 108 were fatal. The ratio of admissions has been 51 per 1,000, a proportion corresponding almost exactly with that of 1867, and comparing favorably with the results of other years. The death-rate, $3\cdot 42$, has, however, been higher than in 1867, when it was only $2\cdot 57$ per 1,000. The admission-rate has fluctuated between 77 in the third group and 37 in the Punjab. In the third group the excessive mortality of $7\cdot 20$ was due to this disease, a result which is ascribable to its remarkable prevalence and fatality in the Nynee Tal Dépôt. In the Punjab the deaths were only $1\cdot 83$ per 1,000.

47. Although Delirium tremens is a cause neither of a high ratio of admissions nor of a heavy percentage of mortality, the statistics of its occurrence require special mention in a Sanitary Report. During the year 1868, 140 cases have been treated, or $4\cdot 4$ per 1,000, slightly higher than the ratio of 1867, when it was $4\cdot 2$. The death-rate $\cdot 38$ is midway between $\cdot 37$ and $\cdot 40$, the ratios of 1866 and 1867. The proportion in which married and unmarried soldiers have suffered from this disease will be seen on reference to a succeeding paragraph.

48. Before proceeding to consider the particulars of Venereal disease, a cause which, though it adds little directly to the death-rate as has already been shown, operates more largely in producing inefficiency than any other which can be named, the relative fatality of different diseases may be glanced at. The ratio of deaths per cent. of cases will be found in the last column of the general tables of the year and of each group of stations. First in the list comes Cholera, which proved fatal to $65\cdot 52$ of all those attacked in 1868. Next, Heat Apoplexy, the fatal cases from which numbered $35\cdot 68$ of the whole of those treated. These are by far the most fatal of all diseases in India. The others come in the following order, Phthisis pulmonalis $15\cdot 36$, Delirium tremens $8\cdot 57$, Hepatitis $6\cdot 70$, and Dysentery $4\cdot 35$. As may be seen by a reference to para. 353 of last Annual Report, the smallest proportion of fatal cases to every 100 of those treated for this last disease in any former year had then been $4\cdot 19$.

49. At page 160 of last Annual Sanitary Report will be found the statistics of Venereal disease among European Soldiers between the years 1852 and 1867. From these it

appears that the admissions from this cause between 1852 and 1858 varied from 133 to 261 per 1,000. The higher ratio occurred in 1858, and from that year up to 1864 it never fell below 250. In 1861 it was as high as 369. The occurrence of only 166 cases per 1,000 in 1867, therefore, presented a remarkable improvement, and it was hoped that with the development of lock-hospitals and increased care in carrying out the rules for the prevention of Venereal disease, a further diminution would be effected during the year under review. This expectation, however, has not been realized. In 1868 the admission-rate from Venereal has been 199, or 33 per 1,000 in excess of the admissions from the same cause recorded in the year previous. For reasons which have been already explained, the ratios for all diseases for that year were calculated on a strength of 34,603, the average of ten months. Had the average for the twelve months been adopted as it has been for 1868, the ratio of admissions from Venereal disease during 1867 would have stood at 170 per 1,000 instead of 166. To make the comparison altogether fair, therefore, the ratio of 199 per 1,000 during 1868 must be compared with 170 of 1867. Still the result is but little less unfavorable than it was, and shows that while out of every 1,000 British Soldiers in 1867, 170 were admitted into hospital suffering from Venereal disease, in 1868 the number was 199. The facts perhaps come out more clearly when the actual figures are stated. In 1867, out of 33,784 soldiers, 5,764 were admitted from Venereal, either in its primary or secondary form, whereas in 1868, out of a strength of only 31,560, the admissions were no less than 6,282. There is no return to show exactly what was the number of such cases constantly under treatment; but taking the average remaining at the close of each month of the year, it may be safely affirmed, as already stated, that during the past year, in the Bengal Presidency, there were always 365 men in hospital suffering from Venereal affections, not including those who were laboring under the indirect effects of the disease. Although these results bear favorable comparison with those of the army in the United Kingdom, as given in the Army Medical Report* for the year 1866, the latest year regarding

* Page 7.

which statistics are yet available, they still show absolutely a great prevalence of Venereal disease among European Soldiers in this Presidency, and relatively an increase of it during 1868 as compared with 1867.

50. The statistics of individual stations for nine years are given at page 159 of last Annual Sanitary Report, and it will be

Comparative prevalence of Venereal disease at different stations and in different corps.

of advantage to compare the results of 1868 with those of 1867. In the following stations there has

been a diminution of Venereal disease :—

STATION.						Admissions from Venereal disease per 1,000 of average strength.	
						1867.	1868.
Fort William	...	...	...	..	..	335	250
Benares	..	...	...	...	...	410	306
Shajehanpore	...	...	...	...	...	288	251
Seetapore	...	...	...	...	...	167	94
Muttra	...	...	...	..	...	186	96
Agra	.	...	...	...	...	317	153
Umballa	...	...	...	...	...	111	92
Umritsur	...	...	...	...	...	195	169
Sealkote	...	...	...	...	...	152	112
Saugor	...	...	...	...	...	190	166
Roorkee	...	...	..	...	...	127	93

In the under-mentioned stations, on the other hand, there has been an increase, and in some of them the increase has been great :—

STATION.	Admissions from Venereal disease per 1,000 of average strength.	
	1867.	1868.
Barrackpore ...	165	315
Dinapore ...	263	319
Fyzabad ...	164	176
Lucknow ...	181	247
Allahabad ...	223	396
Cawnpore ...	193	260
Bareilly ...	175	262
Moradabad ...	200	207
Meerut ...	74	131
Delhi ...	165	166
Morar ...	157	184
Meean Meer ...	130	150
Mooltan ...	124	192
Peshawur ...	72	201
Jubbulpore ...	165	189
Jhansi ...	153	179
Attock ...	93	234

In other places, owing to their not having been occupied during the full year, no fair comparison can be made. The differences observed in the relative prevalence of the disease at different stations exist also in different regiments. Taking Infantry, for example, the following results appear :—

STATION.	Regiment.	Strength.	Number of admissions from Venereal disease.
Allahabad ...	107th	802	317
Peshawur ...	36th	727	216
Rawulpindee ...	1-19th	804	67
Meerut ...	103rd	762	63
Jubbulpore ...	2-12th	808	62

Similar marked discrepancies may be observed in different batteries of Artillery, even between those occupying the same station—results which are doubtless influenced to some extent by the local circumstances of the cantonment as well as by the effect of marches, by the proportion of recruits, the relative number of married men, and the internal economy of the corps.

51. By the orders of the Government of India in the Home Department, dated 11th November 1868, Medical Officers in charge of lock-hospitals were required to submit an annual statement in a form prescribed, showing the working of the institution during the year, and also a short report bearing on any point deserving notice, and especially on the effect which the rules for the prevention of Venereal disease had had on the European troops. From nearly all lock-hospitals such statements and reports for 1868 have been received, and a general review of the whole has been submitted to the Government. It appears that in many stations the registration has been very incomplete, and that the women who consort with Europeans, and from whom disease is contracted, have frequently escaped surveillance. The number of prostitutes borne on the rolls in different cantonments bears no relation to the strength of

Special Returns and Reports
of Lock-hospitals.

the garrison, and the numbers actually registered represent but a small part of the evil to be met. If, moreover, the average number of these unfortunates daily under treatment be compared with the concurrent prevalence of Venereal disease among the soldiery at most stations, the results are equally unsatisfactory. In one station where the admission-rate among British Soldiers from this one cause was 374 per 1,000, the average number of prostitutes under treatment was only 3·4. In another where the disease was little less prevalent the daily average was under 3. In other cantonments where the statistics of the year show that there were abundant sources of infection, the daily number in the lock-hospital was less than one. At one station throughout the twelve months, only three women were admitted, and for nine months out of the twelve the lock-hospital was absolutely empty. In a few cases the hospital records have been either imperfectly kept or altogether neglected, and it is evident that while the duties connected with the institution have been conducted by many Officers with great zeal and attention, the results, as a whole, are very unsatisfactory, and much more decided efforts to overcome the many and serious difficulties which beset the question are required. The irregularity in the attendance of the women for periodical examination has been complained of as one cause for the unsuccessful results, but the remedy which the rules provide for this had not been put in force as it ought to have been.

52. There are many points of detail in connection with this subject which it would be out of place to discuss in an Annual Report. During the past year the area over which the rules are in force has been extended in the case of many cantonments, so as to embrace cities, bazaars, and villages which were under no control and from which disease without doubt chiefly emanated. General recommendations have been submitted to the Government regarding the area which should ordinarily be embraced, the classes of women to whom registration should be extended, the necessity for enforcing the penalties for non-attendance and for other breaches of the rules, and the experimental remission of the monthly fee. Other proposals have also been made for securing the more thorough operation of the preventive measures, and for keeping all the authorities concerned well informed of the results.

53. The ordinary relation of age to mortality has been much disturbed during the year by the large number of fatal cases of Typhoid fever occurring among recruits and young soldiers. In the three first quinquennial periods of life, the ratio of deaths per 1,000 during 1868 varies little more than one per cent., while the contrast between the proportion of 16·45 among men under 20 years of age and 26·38 in men above 30 is by no means so marked as usual. The mortality from Cholera, comparatively small as it has been, has fallen with more than ordinary severity on the young men, a result due, in great measure, to the number of deaths from the disease in Bengal Proper, which have been already alluded to. Out of every 100 deaths from Cholera 47·51 occurred in men under 20; out of every 100 deaths from Fevers the proportion was 43·31. These and other particulars of interest can be learned by reference to the following statement :—

Distribution of the Strength of the Army according to Age on the 1st January 1868.

TOTAL STRENGTH.	Under 20.	20 to 24.	25 to 29.	30 to 34.	35 to 39.	40 and upwards.
33,609	1,642	9,033	12,812	7,127	10,122	525

Deaths of 1868, and the Death rate per 1,000 of the Strength at the different ages.

CAUSES OF DEATH.	DEATHS OF 1868.				DIED PER 1,000 OF THE STRENGTH ABOVE STATED.				COMPARISON IN PERCENTAGES.			
	Under 20.	20 to 24.	25 to 29.	30 and upwards.	Under 20.	20 to 24.	25 to 29.	30 and upwards.	Under 20.	20 to 24.	25 to 29.	30 and upwards.
	Total.	Under 20.	20 to 24.	25 to 29.	30 and upwards.	Total.	Under 20.	20 to 24.	25 to 29.	30 and upwards.	Total.	Under 20.
Cholera ...	7	11	18	21	4.26	1.22	1.41	2.07	47.54	13.62	15.74	23.10
Fevers ...	10	41	25	15	6.09	4.54	1.95	1.48	43.31	32.29	13.87	10.53
Heat Apoplexy ...	3	13	33	43	1.83	1.44	2.58	4.25	18.12	14.26	25.54	42.08
Delirium Tremens ...	...	...	4	8	...	...	.31	.79	...	...	28.18	71.82
Dysentery and Diarrhoea ...	3	13	21	17	1.83	1.44	1.64	1.68	27.77	21.85	24.88	25.50
Hepatitis ...	...	20	38	50	...	2.21	2.96	4.94	...	21.86	29.28	48.86
Phthisis Pulmonalis ...	1	11	18	19	.61	1.22	1.41	1.88	11.91	23.83	27.54	36.72
Heart Diseases ...	1	1	12	28	.61	.11	.94	2.77	13.77	2.48	21.22	62.53
All other causes ...	2	23	39	66	1.22	2.54	3.04	6.52	9.16	19.07	22.82	48.95
All causes ...	27	133	208	267	16.45	14.72	16.24	26.38	22.29	19.95	22.01	35.75
All causes, excluding Cholera ...	20	122	190	246	12.18	13.51	14.83	24.30	18.79	20.84	22.88	37.49

54. The importance of obtaining precise information regarding the changes in the constitution of all British Regiments during their Indian service was alluded to in last Annual Report, and the measures detailed by which

Influence of length of service.

it was proposed in future to supply this deficiency. The order which was issued appeared too late to procure returns from corps leaving the country in the end of 1867. During 1868 only one regiment from this Presidency, the 101st Fusiliers, embarked for England. The records of the changes which had taken place in this body of men who had served for so long in this country would have been specially valuable, even had it been possible to procure these data only with regard to the later years of its history, but no return has been received. An unexpected difficulty in obtaining the required information has arisen in the case of all regiments from the fact that, according to paragraph 1505 of the Queen's Regulations, the records may be periodically destroyed, and this course would appear in some instances to have been followed. Orders have, however, been issued directing that in future such regimental papers as are required for the preparation of the returns in question should be preserved.

55. The strength of married and unmarried Non-Commissioned Officers and Soldiers serving in the three Presidencies on the 1st May 1868 is shown in the following abstract. Out of 780 Staff Sergeants the proportion

Returns of married and unmarried Soldiers.

married was 67·94 per cent. ; of 2,735 Sergeants, 1,204, or 44·02 per cent., were married ; of 51,578 Rank and File only 4,210 were married or 8·11 per cent. :—

Abstract Return of Married and Unmarried European Non-Commissioned Officers and Soldiers serving in the three Presidencies on the 1st of May 1868.

REGIMENTS.	STAFF SERGEANTS.				SERGEANTS.				RANK AND FILE.				TOTAL OF ALL GRADES.		
	Establishment in India.	Married.	Unmarried.	Percentage of married to actual strength.	Establishment in India.	Married.	Unmarried.	Percentage of married to actual strength.	Establishment in India.	Married.	Unmarried.	Percentage of married to actual strength.	Married.	Unmarried.	Percentage of married to actual strength.
ENGINEERS.															
Bengal ...	2	2	2	50	25	3	26	10·34	48	13	29	30·90	18	57	24
Madras ...	...	...	...	...	20	17	3	85	40	7	4	63·636	21	...	...
Bombay ...	...	1	1	50	...	1	2	33·33	...	...	1	...	2	...	...
TOTAL	2	3	3	50	45	21	31	46·03	88	20	37	35·0	41	71	38·26
ARTILLERY.															
Bengal ...	154	97	36	72·03	270	137	170	44·62	5,845	445	5,018	8·14	679	5,294	12·60
Madras ...	70	60	8	85·71	22	82	36	69·49	2,015	369	2,171	14·52	511	2,215	18·74
Bombay ...	64	52	11	81·25	116	59	71	45·38	2,478	191	2,093	8·30	302	2,175	12·15
TOTAL	288	209	55	79·16	408	278	277	50·00	10,338	1,005	9,282	9·76	1,492	9,614	14·22
CAVALRY.															
Bengal ...	77	45	31	59·21	259	78	125	38·12	2,891	170	2,432	6·5	293	2,588	7·54
Madras ...	19	16	4	90	66	32	24	52·33	842	82	717	10·26	130	749	14·78
Bombay ...	28	8	12	40·4	70	21	26	44·68	826	46	700	6·16	75	738	9·22
TOTAL	124	69	47	59·48	395	131	179	42·25	4,559	298	3,840	7·18	408	4,075	10·80
INFANTRY.															
Bengal ...	279	149	84	63·94	1,271	496	633	43·93	25,141	1,778	21,326	5·23	2,423	22,012	9·49
Madras ...	64	40	29	57·97	320	105	193	35·23	8,488	462	5,704	7·49	607	5,926	9·29
Bombay ...	121	60	32	65·2	440	173	218	44·24	8,910	647	7,171	8·27	880	7,421	10·40
TOTAL	364	249	145	63·19	2,031	774	1,044	42·57	40,539	2,887	34,200	7·78	3,910	35,425	9·94
GRAND TOTAL OF ALL ARMS	778	530	250	67·94	2,869	1,204	1,531	44·02	56,124	4,210	47,368	8·11	5,941	44,185	10·78

56. The annexed summary shows the comparative sickness and mortality among married and unmarried soldiers, and at the same time compares these results with those of the year previous. The similarity which pervades the figures of the two years is remarkable:—

Summary of Return for Married and Unmarried Soldiers in 1868, showing also the parallel statement for 1867.

Year.	Average Strength.	Total number of days spent in Hospital during the year.	Average number of days spent in Hospital by each man.	Admission rate of the year per cent. of strength.	DETAILS OF STRENGTH ACCORDING TO AGE.							CAUSES OF ADMISSIONS AND DEATHS.																					
					DETAILS OF STRENGTH ACCORDING TO AGE.							Total Admissions and Deaths during the year.	Fever.	Heart Apoplexy.	Drunkness.	Bellium Tremens.	Diarrhoea and Dysentery.	Hepatitis.	Venereal Affections.	Heart Disease.	Phthisis Pulmonalis.	Disease of Lungs.	Ophthalmia.	Scurvy.	Accidents and Injuries.	Suicide.	All other Causes.						
					Under 20.	20 to 24.	25 to 29.	30 to 34.	35 to 39.	40 and upwards.	Under 20.																	20 to 24.	25 to 29.	30 to 34.	35 to 39.	40 and upwards.	
1868	3,351	26,225	8	78	114	987	1,418	622	136	1	1	1	1	1	1	{ Admitted ... 2,613	923	40	106	30	202	145	15	16	17	17	158	...	14	1	787		
																{ Died ... 98	3	21	1	8	8	10	...	6	7	2	...	...	...	1	1	11
1867	3,012	27,146	9	88	1128	835	1,331	582	135	1	1	1	1	1	1	{ Admitted ... 2,612	804	19	83	19	201	97	12	32	28	107	132	4	170	1	729		
																{ Died ... 110	6	9	1	4	6	3	...	3	8	3	...	...	2	2	11	
1868	30,336	561,707	184	139	1762	9176	10,813	6,211	1,949	365	27	140	188	147	56	10	{ Admitted... 42,158	57	13,890	221	638	107	3443	1465	9961	321	223	1306	628	23	3621	4	10,718
																{ Died ... 508	41	99	70	6	3	57	87	4	29	41	21	...	3	17	11	73	
1867	31,862	567,739	184	138	1293	8806	13,915	6,310	2,131	315	25	212	327	218	74	8	{ Admitted ... 42,631	551	13,970	122	572	104	3652	1702	5227	351	204	1307	736	24	2662	11	11,149
																{ Died ... 808	370	77	47	8	10	82	76	2	30	36	2	...	1	21	10	60	

Total for married men

Total for unmarried men

57. The statistics of the two years are compared and the results fully explained in the annexed memorandum by Dr. Bryden :—
 Dr. Bryden's memo. on the subject.

In the memorandum on this subject furnished in 1867 (page 171 of last Report), the necessity was pointed out for reading the results shown in the return for married and unmarried men in connexion with those shown in the Age Table of the year, since the ratios are to a great extent representative only of the fact that a certain proportion of the married men are of an age which contrasts with that of the unmarried men taken as a body.

In 1867, 68 per cent. of the total of married men exceeded 30, and 32 per cent. were under 30 years of age; of the unmarried 28 per cent. exceeded 30, and 72 per cent. were below this age.

In 1868, 66 per cent. of the total of married men are returned as over 30, and 34 per cent. as under 30; of the total of unmarried 28 per cent. exceeded 30, and 72 per cent. were under 30 years of age.

In the Age Tables for 1867 and 1868, it is shown that the death-rate (exclusive of cholera) was as follows :—

In 1867, 25,790 men below 30 gave 318 deaths=12.33 per 1,000.

In 1868, 23,487 men below 30 gave 332 deaths=14.14 per 1,000.

In 1867, 10,857 men above 30 gave 285 deaths=26.25 per 1,000.

In 1868, 10,122 men above 30 gave 246 deaths=24.30 per 1,000.

In the results for both years the great excess of the death-rate of men above 30 is apparent; and the married men being the older class may be expected to have an excess of mortality proportionate to their age taken as a class :—

In 1867, 3,012 married men gave 110 deaths=19.26 per 1,000, exclusive of cholera deaths.

In 1868, 3,351 married men gave 79 deaths=23.58 per 1,000, exclusive of cholera deaths.

In 1867, 30,862 unmarried men gave 498 deaths=16.10 per 1,000, exclusive of cholera deaths.

In 1868, 30,336 unmarried men gave 527 deaths=17.37 per 1,000, exclusive of cholera deaths.

The components of the death-rates of the two classes are contrasted for the years 1867 and 1868 in the following statement. As in 1867, the excess of the death-rate of 1868 in the case of the married is seen to be due to the diseases peculiar to the old soldier—heat apoplexy, delirium tremens, and heart disease. The enormous excess of the fever rate in the case of the young unmarried soldiers is due to deaths caused during the acclimatising

process by the fever attended with the characteristic typhoid lesion alluded to in a previous paragraph:—

Death-rates of 1867 and 1868 contrasted.

CAUSES OF DEATH.	MARRIED.		UNMARRIED.	
	1868.	1867.	1868.	1867.
Cholera ...	2.68	17.26	1.35	11.99
Fevers ...	.88	1.99	3.26	2.50
Heat Apoplexy ...	6.27	2.99	2.31	1.52
Drunkenness ...	.30	.33	.20	.26
Delirium tremens ...	2.39	1.33	.10	.32
Dysentery ...	2.39	1.99	1.88	2.66
Hepatitis ...	2.99	1.00	2.87	2.46
Heart diseases ...	1.79	1.00	.96	.96
Phthisis pulmonalis ...	2.09	2.66	1.35	1.17
Lung diseases ...	.60	1.00	.79	.94
Accident ...	.30	.66	.56	.68
Suicide ...	.30	.66	.46	.32
All other causes ...	3.28	3.65	2.63	2.31
Died per 1,000 of strength ...	26.26	36.52	18.72	28.09
Exclusive of cholera ...	23.58	19.26	17.37	16.10

In 1867, 29.09 per cent. of all deaths of married men occurred in men below 30, and 70.91 per cent. in men above 30.

In 1868, of the total deaths of married men, 21.59 per cent. were in men below 30, and 78.41 per cent. in men above 30.

In 1867, 35.02 per cent. of all deaths of unmarried men occurred in men above 30, and 64.98 per cent. in men below 30.

In 1868, of the total deaths of unmarried men, 62.50 per cent. were in men below 30, and 37.50 per cent. in men above 30.

Death-rate at the same ages in the two classes contrasted.

AGES.	MARRIED.			UNMARRIED.		
	Strength.	Deaths.	Ratio per 1,000.	Strength.	Deaths.	Ratio per 1,000.
Under 20 ...	.....	.....	16.74	1,762	27	16.30
20 to 24 ...	148	1		9,176	140	
25 to 29 ...	987	18		10,843	188	
30 to 34 ...	1,418	40	28.21	6,241	147	23.55
35 to 39 ...	662	20	36.34	1,949	56	28.52
40 and upwards ...	136	9		365	10	

At no age is the death-rate more favorable in the married, and in the case of the old married men it is very disproportionate. The same was observed in the ratios of 1867. In the married men below 35 the ratio was 31.37 per 1,000, and in the unmarried 25.51; and in the case of married men above 35 the ratio was 53.00, against 35.16 shown in the case of the unmarried men above 35. In 1868 the gradual rise of the ratio with age is shown in both classes, but it is always higher in the married, and this I attribute to the comparative segregation of the married men, leading in many cases to habitual intemperance and to the deteriorated value of the life of the old married Indian soldier, who is tied to the country by the fact of his being married.

Admission rates of the two classes in 1867-68 contrasted.

CAUSES OF ADMISSIONS.	MARRIED.		UNMARRIED.	
	1868.	1867.	1868.	1867.
Cholera ...	·45	2·12	·19	1·79
Fevers ...	24·56	26·69	45·59	44·29
Heat Apoplexy ...	1·19	·63	·73	·40
Drunkenness ...	3·17	2·75	2·10	1·85
Delirium tremens ...	·89	·63	·35	·34
Dysentery and Diarrhoea ...	6·03	9·66	11·35	12·80
Hepatitis ...	4·33	3·22	4·83	5·52
Veneral diseases ...	·45	·40	19·99	16·94
Heart diseases ...	·48	1·06	1·06	1·14
Phthisis pulmonalis ...	·51	·93	·73	·66
Diseases of lungs ...	2·30	3·55	4·60	4·23
Ophthalmia ...	4·71	6·04	2·07	2·38
Accidents ...	5·43	5·64	9·97	9·56
All other causes ...	23·48	24·36	35·41	36·23
Admitted per cent. of strength ...	77·98	87·68	138·97	138·13

The predominance of climatic fever among the younger men is shown by a fever ratio which is nearly double in the case of the unmarried; to climatic influences affecting the more susceptible body may be ascribed also the exaggeration of the ratio for bowel complaints among the unmarried. Hepatitis is not specially a disease of the old man; it prevails at any age subsequent to the completion of the primary process of adaptation.

The disparity of the admission rates caused by the item of venereal affections amounts to 19·54; the ratio for the married is ·45 per cent., and for the unmarried 19·99, the equivalent, in the first instance, of 15 admissions and in the latter of 6,064.

The ratio for eye diseases is more than double in the case of the married, due, probably, to infection acquired during the time that the families are suffering from ophthalmia; in the married the ratio is 4·71 per cent., and among the unmarried 2·07 per cent.

The daily sick-rate of the unmarried is more than double that of the married men, due, no doubt, in a great measure, to venereal disease:—

In 1867, 3,012 married men spent 27,146 days in hospital, or 9·01 days per man.

In 1867, 30,862 unmarried men spent 567, 739 days in hospital, or 18·39 days per man.

In 1868, 3,351 married men spent 26,825 days in hospital, or 8 days per man.

In 1868, 30,336 unmarried men spent 561,707 days in hospital, or 18½ days per man.

58. The Annual Returns of the British Regiments serving in the Bengal Presidency show that the average number of each class—abstainers, temperate, and intemperate—was as follows:—

Sickness and mortality among temperate and intemperate Soldiers.

	Number reported on.	Abstainers.	Temperate	Intemperate.	TOTAL.
Cavalry ...	2795·22	37·79	2708·06	49·37	2795·22
Artillery ...	5620·98	41·90	4984·59	594·49	5620·98
Infantry ...	24877·03	515·21	22892·48	1469·34	24877·03
TOTAL ...	33293·23	594·90	30585·13	2113·20	33293·23

Compared according to the amount of sickness and mortality in each, the results are as follow :—

Class.	Strength.	Average daily sick.	Ratio per cent. of sick to strength.	Number of deaths.	Ratio per cent. of deaths to strength.	Number invalided to England.	Ratio invalided per cent. of strength.
Abstainers	594.90	20.63	3.47	8	1.36	24	4.08
Temperate	30585.13	1357.21	4.44	552	1.80	1,318	4.31
Intemperate	2113.20	122.92	5.82	56	2.65	186	8.80

If these data could be relied on as correct some very interesting deductions might be drawn from them, but their accuracy is open to question. In one of the Cavalry Regiments averaging about 450 strong, one man is returned as intemperate, in another two and in a third the proportion of intemperance in the regiment is represented by .41; the highest number is 18. In many of the Batteries of Artillery not a single intemperate man is returned. In many others the number varies from 1 to 5, but in one Battery of 150 men 39 are returned as intemperate, and in another of similar strength 112 are entered under the same head. In the Infantry the discrepancies are equally marked. In one regiment there were only four intemperate men, in another 139, in a third 227, and between these extremes there are all degrees of variation. It is evident that a very different standard must be adopted in different corps. A simple form in which all the facts can be collected so far as they can be ascertained has been recommended for adoption in substitution for the very elaborate return now in use.

59. If the sickness and mortality among the men of different arms of the service be compared, it will be found that the results are much more unfavorable among the Artillery than among either Cavalry or Infantry. During the last six years the ratios of admissions into hospital among each have been as follow :—

YEARS.					ADMISSIONS PER 1,000.		
					Artillery.	Cavalry.	Infantry.
1863	...	...	...	...	2,365	1,749	1,631
1864	...	...	...	...	1,945	1,524	1,446
1865	...	...	...	...	1,869	1,318	1,498
1866	...	...	...	...	1,698	1,177	1,423
1867	...	...	...	...	1,630	1,081	1,442
1868	...	...	...	...	1,577	1,155	1,301

In every one of these six years the proportion of cases of sickness among men of the Artillery has been considerably higher than among either of the

other two, and in some of them the excess is very marked. If the death-rates be compared, the Artillery again appear in unfavorable contrast :—

YEARS,					DEATH-RATE PER 1,000.		
					Artillery.	Cavalry.	Infantry.
1863	...	...	...	...	34·53	16·33	27·09
1864	...	...	...	...	23·83	19·91	22·46
1865	...	...	...	...	31·23	22·55	25·89
1866	...	...	...	...	23·86	15·96	19·77
1867	...	...	...	...	27·80	11·80	30·7
1868	...	...	...	...	24·10	16·40	17·60

Excepting in 1867, in which the death-rate among Infantry was the highest, the annual loss of life in the Artillery has been unfortunately greater than in either of the other two arms of the service. The statistics of 1867 were exceptional on account of the prevalence of cholera, in which the Infantry suffered most severely. Particulars regarding the diseases which chiefly caused admissions and deaths in 1867 and 1868 under individual diseases are entered and compared in the annexed statement. No great disparity, however, is to be found in any one particular item, and the higher ratio of sickness and mortality among the Artillery is divided over many of them :—

Comparative Statement showing the number and percentage of Admissions and Deaths in the Royal Artillery, Cavalry, and Infantry serving in the Bengal Presidency during the years 1867 and 1898.

YEAR.	Corps.	Strength.	ADMISSIONS.										DEATHS.										TOTAL DEATHS.						
			Fever.	Apoplexy.	Diseases of the Chest.	Cholera.	Diarrhea.	Dysentery.	Liver diseases.	Small-pox.	Veneral.	Wounds.	Ophthalmia.	Other diseases.	TOTAL ADMISSIONS.	Fever.	Apoplexy.	Chest diseases.	Cholera.	Diarrhea.	Dysentery.	Liver Diseases.		Small-pox.	Veneral.	Wounds.	Ophthalmia.	Other diseases.	
1867	ARTILLERY.	Total	5,406	2,827	18	354	109	682	234	375	9	951	410	131	2,986	8,810	9	12	17	62	4	11	15	1	...	4	...	18	153
		Percentage	...	49.59	.29	6.54	2.01	12.24	4.32	6.93	.16	17.59	8.25	2.42	53.57	162.96	.16	.22	.31	1.14	.07	.20	.27	.010733	2.78
1868	ARTILLERY.	Total	5,610	2,769	36	487	19	510	151	361	2	1,027	828	159	2,462	8,850	16	22	15	13	1	8	29	...	11	...	20	135	
		Percentage	...	49.36	.64	8.68	.34	9.25	2.69	6.43	.04	18.31	14.76	2.84	44.42	157.75	.28	.39	.27	.23	.02	.14	.52	...	.20	...	.36	2.41
1867	CAVALRY.	Total	2,687	574	7	176	6	104	41	105	2	349	292	63	1,281	2,915	2	4	3	4	1	1	7	1	...	2	...	7	32
		Percentage	...	21.35	.25	6.52	.22	3.89	1.55	3.93	.07	12.94	7.48	2.55	47.59	108.08	.07	.15	.11	.15	.03	.03	.27	.030727	1.18
1868	CAVALRY.	Total	2,924	874	17	255	8	110	68	111	...	410	408	75	1,007	3,377	9	7	3	1	...	1	10	...	6	...	6	11	49
		Percentage	...	29.90	.58	8.72	.10	5.10	2.33	3.80	...	14.02	13.95	2.56	34.44	115.49	.31	.24	.10	.03	...	.03	.34	...	.21	...	.39	1.64
1867	INFANTRY.	Total	22,941	11,955	140	1,330	532	2,229	846	1,086	21	3,513	946	773	9,447	33,074	67	40	53	376	22	43	42	2	...	1	...	70	715
		Percentage	...	52.11	.43	5.79	2.31	9.71	3.68	4.73	.09	16.02	4.12	3.36	42.17	144.15	.29	.17	.22	1.63	.09	.19	.15	...	...	...	.30	3.07
1868	INFANTRY.	Total	25,114	10,988	215	1,798	56	1,843	886	1,106	14	4,033	2,000	584	8,596	32,684	66	62	55	40	5	37	66	...	29	...	61	441	
		Percentage	...	43.75	.86	7.16	.22	7.34	3.53	4.40	.06	16.07	7.96	2.32	33.87	130.14	.26	.25	.22	.16	.02	.15	.26	...	.12	...	.32	1.76

60. In endeavouring to explain the causes of this greater liability of the Artillerymen to sickness and death, it is necessary to examine whether there are any special reasons as regards age or condition by which it may be accounted for.

As regards age, there is no disparity among the men of the Artillery which would satisfactorily account for the difference in results. Out of every 100 men of each branch the relative proportions at the different quinquennial periods of life during 1867 and 1868 were as follows:—

AGES.						INFANTRY.		CAVALRY.		ARTILLERY.	
						1867.	1868.	1867.	1868.	1867.	1868.
Under	20	...	...	...	...	4.59	5.72	1.79	3.98	1.42	1.50
20	to 24	...	...	...	...	21.04	28.19	9.30	13.67	27.13	27.85
25	.. 29	...	...	...	...	43.54	37.27	49.66	47.89	38.68	36.82
30	.. 35	...	...	...	...	22.05	19.99	26.33	26.42	22.87	24.08
35	.. 39	...	...	...	...	7.54	7.31	10.84	6.25	8.58	8.13
40 and upwards	...	...	...	...	...	1.24	1.52	2.08	1.79	1.32	1.62
TOTAL						100	100	100	100	100	100

In the influence of the married and unmarried state again, there is no such difference in the proportion of the two classes as would account for the results. So far a comparison can be fairly instituted between all three branches of the service, but the stations occupied by the Cavalry are so few, and, as a rule, so healthy, that neither sickness nor mortality among them can be considered in relation to what occurs amongst the Infantry and Artillery. Leaving, therefore, the Cavalry out of any further discussion, it remains to consider the reasons which have been assigned to account for the fact that among the Artillery sickness is more frequent and the death-rate higher than among the Infantry. The two occupy very much the same stations in very much the same relative proportion, and the climatic influences to which both are exposed differ but little. The chief causes adduced are—

1st.—The comparatively heavy duties performed by the Artillery both during day and night;

2nd.—The larger number of recruits among them, and men of inferior physique;

3rd.—The exposure at stable duty; and

4th.—The want of suitable clothing.

The last two causes may, undoubtedly, have exercised considerable influence, but as serge clothing has already been sanctioned, and stabling is being provided, they do not require any further discussion. The comparative physique

of the Artillery, moreover, is a question on which no decided opinion can be given. How far the relative proportion of recruits affects the results has already been incidentally noticed, and the table of relative ages which has been given shows that there is no special preponderance of any one class among the Artillery which will explain any increase of either sickness or mortality. The testimony of all the Officers whose opinions have been recorded is to the effect, that the duties of an Artilleryman are much more arduous than those of any other soldier. Night work in particular, and especially frequent nights on guard, are a most fruitful source of tropical disease, and heavy duties may force a man into hospital who would not otherwise seek admission. That this is at least in a great measure the explanation of the high sick-rate would appear to be confirmed by the fact, that the excess ratio of admissions among the Artillery compared with the other arms is very much greater than the excess ratio of deaths. From all the evidence which is available, I am therefore inclined to believe that the more unfavorable returns from the Artillery are chiefly due to the greater exposure, especially at night, to which they are subject; that this is a cause of the greater sickness, and that the results are apparently exaggerated by the fact that the men, being harder worked than those of either Cavalry or Infantry, are obliged to resort to hospital when such a course would not be necessary in the case of other soldiers whose duties are lighter.

61. Fourteen hundred and five men were invalided during the year, of whom 421 were recommended for discharge and 984 for change of climate. The total ratio of loss from these two causes equalled 45·49 per 1,000. In 1867 the ratio was 47·28, in 1866 it was 49·04. From death and invaliding together the loss during 1868, including the figures given in the foot note to Table XIII, was 66·37, a result which bears favorable comparison with 78·23 of 1867, and generally with those of the previous years given in the Third Annual Report (p. 94). The causes of invaliding are also detailed in Table XIII.

62. Considerable discrepancies appear between the statistics of sickness and mortality among European Troops shown in Dr. Bryden's Tables and those given in the Army Medical Reports, but they admit of easy explanation. In the following statement the figures of the one are compared with those of the other. In the earlier years commencing with 1860, the first year in which any information is given in the reports of the Medical Department regarding the Army in India, the returns received from the country were confessedly incomplete. Of late the differences in strength and sickness have been comparatively trifling. The death ratio can never agree, because the English statistics include the casualties which occur among invalids after leaving India, while this information is not available in this Office, and could only be procured with much delay. The large number of deaths occurring among men after leaving India is worthy of notice, and further details regarding the causes to which they have been due are very desirable in order to complete the Indian statistics:—

Comparison of the Statistics contained in the Army Medical Reports with those given in Dr. Bryden's Tables.

YEAR.	Returns.	Strength.	Rates of admission per 1,000.	Rates of deaths per 1,000.	REMARKS.
1860	... Dr. Bryden, Army Medical Statistics.	{ 48,901 42,371	2,051 2,023	*36·77 39·37	In the Army Medical Statistics only 1,668 deaths are entered instead of 1,799, and of these 42 occurred among invalids out of India, which are not given in Dr. Bryden's Tables. The Army Medical Report states that the returns received from India are not so complete as desirable.
1861	... Dr. Bryden, Army Medical Statistics.	{ 44,879 37,483	2,045 1,951	45·93 45·57	
1862	... Dr. Bryden, Army Medical Statistics.	{ 42,980 39,312	1,970 1,851	28·11 27·55	The Army Medical Statistics were prepared from the quarterly returns, the annuals being in arrears. They include 45 deaths among invalids out of India.
1863	... Dr. Bryden, Army Medical Statistics.	{ 41,351 42,575	1,838 1,759	25·08 26·26	
1864	... Dr. Bryden, Army Medical Statistics.	{ 40,385 39,936	1,641 1,557	21·10 22·56	The deaths of 72 invalids out of India are included in Army Statistics.
1865	... Dr. Bryden, Army Medical Statistics.	{ 37,210 37,631	1,605 1,548	24·24 26·65	
1866	... Dr. Bryden, Army Medical Statistics.	{ 35,013 35,446	1,501 1,443	20·11 23·19	The deaths of 84 invalids occurring out of India are included in Army Medical Statistics.
					The deaths of 82 invalids similarly returned.
					The deaths of 79 invalids similarly returned.
					The deaths of 108 invalids similarly returned.

63. By referring to the particulars given in Table VIII, a comparison may be instituted between the different stations occupied by European Troops as regards the relative number of admissions into hospital, the daily

Comparison of stations in 1868.

ratio of constant sick, and the proportionate mortality in each. Judged by the first standard, it will be found that cases of illness varied from 2,940 per 1,000 in Lahore Fort (among a small body of men) to 729 at Nowgong. In this comparison hill stations and places occupied during only a portion of the year are omitted. The daily average per centage of sick varied from a maximum of 15·3 during nine months at Berhampore to 3·12 at Roorkee. The highest death-rate, 38·55 per 1,000, occurred at Berhampore, and the lowest, 6·17 per 1,000, at Attock. The comparison of stations by any or all of these standards for a single year can, however, lead to no definite conclusions; so many factors came into play at different times. The previous health of the troops occupying the cantonment, the length of service in India, the composition of the corps as regards age and habits, the peculiarity of the season, epidemic influences, and other causes, may each and all affect the statistics of the year, and it is only by a comparison of a series of years that the effect of such disturbing elements can be avoided. The current year completes the ten-year period, regarding which reliable data are available, such as can fairly be compared; and in submitting the results of 1869, I propose at the same

* Including deaths out of hospital.

time to consider these results in relation to those of the decade which it will complete.

64. Similar remarks apply to the statistics of individual regiments as shown in a single year. Taken by themselves the results of twelve months are of no great value, but when these results are collected and tabulated for a series of years, they cannot fail to convey much important information. On this ground the details shown in Table XVI are of particular value. In their present form the regimental tables have been included in the Annual Statistics only since 1865. The new regiments coming in relief after the mutinies commenced to arrive in 1864, and it will be well in the decennial tables to carry the data back and to trace the history of all of them from that year. During 1868 there have, as usual, been great variations in the sickness, mortality, and invaliding of different corps. The highest ratio of admissions into hospital occurred in the 2-25th during 11 months at Berhampore—2,283 per 1,000; in the Garrison Battery at Delhi 2,204; in the F Brigade E Battery at Umballa 2,272; in the F Brigade F Battery at Meean Meer 2,900; in the XIX Brigade E Battery at Rawulpindee 2,288; in the A Brigade E Battery at Peshawur 2,155; in the XXII Brigade 4th Battery 2,736; in the XXV Brigade 1st Battery at Darjeeling 2,274; in the XXII Brigade B Battery at Ferozepore 3,266 per 1,000. The high ratio of sickness in six of these eight Batteries was evidently due to the unhealthy influences of Peshawur, Saugor, and Jhansi, which had been occupied in the year previous. The greatest proportion of mortality occurred in the VIII Brigade G Battery at Cawnpore during nine months, in which time it amounted to 70·92 per 1,000. This Battery arrived from England in April, and during the nine months following it lost ten men out of an average strength of 141. Among the small body of Artillery at Govindghur, and in one or two of the other Batteries, no casualties occurred during the year.

65. Allusion has already been made to the high ratio of sickness and mortality in the convalescent depôts, and a reference to the latter part of Table XVI will furnish the particulars. At Dhurmsalla, Darjeeling, and Nynce Tal the admission rates, 1,128, 1,352, and 2,000, and also the death-rates 27·52, 28·57, and 38·58, were high. The mortality at Nynce Tal is specially so. At the same time it is to be remarked that results as unsatisfactory, and in some cases still more so, have appeared in previous years. The question of what benefits are derived by sick soldiers from a residence in the hills, and what degrees of sickness are suited for such a change, is of very great importance, and it is one on which the collected statistics of a series of years will be particularly valuable. Its consideration may therefore be conveniently deferred until the statistics of the ten-year period have been compiled.

66. In place of the single table which has been given in previous years to show the statistics of sickness and deaths among the women and children of European Regiments, five tables have been prepared to show the results for 1868, and the additional particulars so collected from year to year must

ultimately prove of much value. Out of an average strength of 3,196 women during the past year there were 101 deaths, or a proportion of 31·60 per 1,000. In 1866 the death-rate was 25·46, the lowest ever reached; in 1867 it was 46·21. In no previous year on record had it been less than 42. The various causes to which the deaths in 1868 were due are detailed in Table XVII. The highest ratio was caused by fever, 4·69; then dysentery and phthisis, each 4·38; child-birth 3·13; cholera 2·82 per 1,000. The admission-rate of 1,217 per 1,000 has been lower than 1,359 per 1,000 in 1867. It is, however, to be observed that although all the deaths are recorded, many cases of sickness among both women and children come under treatment which never appear in the hospital returns. Under orders of His Excellency the Commander-in-Chief, it is desired that only the more serious cases should be admitted into hospital, and that those of a more trifling character should remain in their quarters. It does not appear how far this order has been carried out, but it is evident that unless all such cases are returned, the records of illness among women and children will be very imperfect. The desirability of entering all cases of sickness, no matter whether admitted into hospital or not, has already been brought to the notice of the Government.

The distribution of the deaths by stations is shown in Table XIX. In some cases the ratios appear excessive owing to the small strength on which a very few and in some instances solitary deaths are calculated. The return of Fort William, in which only one woman died out of 102, is the most favourable.

67. Among European children in 1867, the admissions and deaths were in the proportion of 969 and 104·9 per 1,000. **Sickness and mortality among children.** During the past year the admissions have equalled 840 and the deaths 86·70, a return more unfavorable than that of 1866, in which they were 75·11 per 1,000. Of the 438 who died during the past year, no less than 73, or 14·45 per 1,000, died of convulsions, 89, or 17·62 per 1,000, from diarrhœa, 41 of fever, 47 of atrophy, and 38 of dentition. Of the total of 438 casualties, 288 were due to these causes. The remarkable influence of season causing an increase of deaths from 2·12 in January to 16·45 per 1,000 in June is clearly shown in the 4th column of this Table (XVIII). The excessive mortality which prevailed among the children at many of the stations is seen in the last column of Table XX. At Dum-Dum, out of 70 children, 16 died in one year, or at the rate of 228 per 1,000. Cholera was little fatal to children during 1868. It attacked them at only five stations, and the deaths due to it were only 13. In 1867 it numbered 94 victims among children. The last table of this series (No. XXI) shows the detail of admissions and deaths from different diseases, and how far each contributed to the total results of the year.

68. The importance of statistics to show the sickness and mortality among Officers serving in India has not been lost sight of, but the difficulty of collecting any data that can be relied on is great. The number of Officers entered as sick in the regimental returns is no index of the actual amount of sickness among them as a body, because cases of obstinate or serious illness are so often transferred

for change of climate to England or the hills, and regarding the sickness among the large body of Officers on staff employ no records whatever are kept. The actual mortality might be learned from the Adjutant General's Office, and I propose to endeavour to collect all such data on this point as may be procurable, and to add them to the statistics of the ten years. At the same time the death-rate so deduced will not be the death-rate incident on residence in India, but rather that among a body of men who have experienced Indian service, but many of whom have spent but little time in the country.

69. In G. O. C. C. No. 199, dated the 30th August 1867, registration of deaths was prescribed in all cantonments. In accordance with a subsequent order (No. 387, dated 20th December 1868), monthly returns in a form recommended by the Sanitary Commissioner were called for to be regularly forwarded to this Office. Returns from most cantonments have been received regularly during the current year, and in some cases particulars have been furnished regarding the mortality of 1868. For the sake of greater convenience, and in order that the information may be available to His Excellency the Commander-in-Chief, it has recently been ruled (G. O. G. G., Military Department, No. 711, dated 2nd July 1869), that these returns shall in future be submitted through the Adjutant General, and then forwarded by him to the Sanitary Commissioner.

It has also been decided to render registration of deaths within the limits of Military Cantonments compulsory under the provisions of Act XXII of 1864, and the following clause has accordingly been added to the Cantonment Regulations (G. O. G. G. No. 645, dated 15th June 1869):—"The head of any house or family in which a death may occur shall within 24 hours report or cause to be reported to the Cantonment Magistrate, or, in his absence, to the Officer Commanding the Station, the fact of such death, as also the cause to which death is believed to have been due."

70. In last Annual Report it was stated that the question of compelling all non-military persons residing within the limits of cantonments to submit to vaccination as a condition of residence was under consideration. On this point the Government has decided that compulsion shall not be enforced. It is considered that no necessity has been shown for making arrangements for vaccination in cantonments different in their nature from those which prevail outside the cantonment limits; that everything should be done to encourage vaccination both in cantonments and their neighbourhood, and that any proposals having this object in view should be favorably received.

71. The details of barrack accommodation to be enunciated become necessarily every year fewer and fewer. All the great principles of construction have been decided, and it only remains to carry them into effect. During 1868 the only matter of importance which has been resolved on has been a standard plan of cook-room for European Troops. The cook-rooms

hitherto in use have been open to many objections. They have generally been dark and smoky, and cooking operations have been conducted on the ground. The ~~new~~ plan meets these objections. It provides also a separate room in which a European Non-Commissioned Officer or Private can superintend the cooks, and the whole arrangements are a great improvement on those still in force. Under this head may also be noticed the instructions which have recently been issued to avoid the defilement of the ground by bodies of workmen in the neighbourhood of barracks and other buildings under construction. Latrines will now be provided for their use, and a proper system of conservancy enforced. And in order to ensure the cleanliness of the vicinity, the ground around all new barracks will be ploughed and cropped previous to their occupation, except in any cases in which the delay thereby occasioned would prove inconvenient.

72. Considerable progress has been made in the construction of the new barracks and of the auxiliary accommodation to be provided with them. Barracks for the Artillery at Barrackpore are in progress. At Cawnpore, Moradabad, Chuckrata, Raneekhet, Delhi, Mooltan, Jullundur, Lucknow, Sectapore, Fyzabad, Jubbulpore, Saugor, Morar, Gwalior, and Nowgong work has been well commenced. At Allahabad the new barracks were occupied in the spring, but owing to the regiment having entered them before it had shaken off an attack of cholera on account of which it had moved into camp from its old quarters, the new buildings have not had a fair trial.

73. During the hot season of the current year arrangements have been made for locating a larger body of men in the hills than have ever been quartered there before. A statement prepared by the Quarter Master General in February 1869 showed that either in cantonments at depôts or in working parties, the probable number of British Troops of all arms stationed in the hills would amount to nearly 6,000 men. Of these 2,101 would be in cantonments, 1,676 at sanitarium, and 2,120 in working parties. At Raneekhet and Chuckrata the men are employed in clearing the ground and in building operations required for these new hill stations.

74. The duration of the year's operations on the Abbottabad and Murree Road during 1868 was only half that of ordinary seasons, the soldiers being suddenly called away to active service on the Huzara Frontier. The working party consisted of 14 Officers and 500 men of the 19th Foot, and three Officers with 150 men of the 77th. It was intended that they should commence work on the lower portions of the road early in April, continue there till the 15th May, and that then going up to higher and cooler portions of the line, they should return about the 20th September for six weeks to the encampment they had left in the spring. Owing, however, to late arrival at Abbottabad and the difficulty of procuring carriage, only fifteen days were spent in the lower camp at Bugnotur. The men did not march into Abbottabad till the 6th May and did not commence work at Bugnotur, ten miles from that

station, till the 13th. It soon, however, became excessively hot here : on the 26th the first detachment moved to the cooler climate of Doonga-gullee, and by the 1st June the whole of the men were engaged on the higher portions of the road ; on the 9th August operations were abruptly brought to an end. The value of the work done is estimated at Rs. 23,414. The expenses of the season are stated as amounting to Rs. 32,477. In this are other items, such as powder and tools, which cannot be fairly debited, as they must have been provided, no matter what agency had been employed. The extra expense devolving on the Commissariat Department for provisioning the parties was not known, and has not been entered. The health of the men was not so good as in former years. Some of them, especially in the 77th, came up in a weakly condition. The Medical Officer, however, is of opinion that, considering the men had served the previous year in Peshawur, where most of them had contracted intermittent fever and were much reduced in stamina, the results were satisfactory. The number of admissions from fever steadily decreased ; there was no Venereal and no disease arising from intemperance. The return shows that of an average of 144 men, the average daily sick numbered 5.04. During the four months, May, June, July, and half of August, there were 96 admissions into hospital ; one death only occurred, and that was from phthisis. In the 1-19th, during the same period, out of an average of 500 men, the daily average sick varied from 7.71 to 9.93. There were 110 admissions into hospital : of these a considerable number were Venereal cases, who had contracted the disease before leaving Rawulpindee. There were only two deaths in this party, one from accident and the other from heart disease ; the second occurred after over exertion in wrestling. The opinion of the Officer in command of these detachments entirely confirms that of his predecessors. He believes that "the moral, physical, and pecuniary advantages to the men cannot be over-estimated." Their behaviour was excellent, and they manifested great interest in the works.

Another party, consisting of 186 men of the 38th Regiment, was also employed in the Dalhousie Hills. No special report of this detachment has been received. Although there were no casualties among them, the sick list was high, and averaged during the six months, May to October, $5\frac{1}{2}$ per cent. It is remarkable that heart disease is entered as a frequent cause of admission. In future only healthy men will be selected for such employment ; they will not be employed at a low elevation, and work will be commenced at as early a period of the year as practicable. With these precautions the best results may be anticipated.

75. Captain Stockwell, the Director of Military Gymnastics, has favored me with the following note on the establishment and practice of Military Gymnastics in the Bengal Presidency :—

"The introduction of a regular and organized system of gymnastic instruction, equal in every respect to that which has been carried out at Home, is in India being rapidly developed, by means of the many large and well appointed gymnasia now being constructed, and in some cases about to be opened, at all the principal stations occupied by British Troops. These buildings are divided into two classes, experimental and barrack gymnasia. In Bengal

alone, of the former, there will be four and possibly later as many as six, all detached buildings, specially constructed, thoroughly fitted and roomy ; and being situated in the largest stations in the Presidency, may be said to correspond with those at Aldershot, Chatham, and the Curragh, &c. There will also be in Bengal from twenty to five and twenty barrack gymnasia, situated in the ground floors of the new double-storied barracks, and being large and well-found halls, each is ample for all the gymnastic requirements of a regiment.

“ An experimental gymnasium is now ready at Lucknow, and a barrack gymnasium likewise at Allahabad ; and as all the others are, more or less, advanced in construction, or about to be taken in hand, the whole will probably be opened within three years ; some sooner, of course, than others.

“ The system of private regimental gymnasia under these circumstances, and as might have been expected, has nearly been extinguished ; but this is no cause of regret, as large covered buildings, with complete and excellent apparatus, are being substituted for the open air, ill-found, and inadequate gymnasia constructed by regiments at their own cost in anticipation of the introduction of the system by Government.

“ Running drill has been practised by almost every British Regiment in India during the past cold season ; the practice being carried progressively up to 900 and 1,000 yards, during a period averaging three months. A report, accompanied by a medical certificate, on the result of the practice has been received from every regiment, and it is satisfactory to state that whilst in no instance was an unfavorable opinion on running drill submitted by either Colonels or Medical Officers of Regiments, the majority spoke in terms of praise of the system. The following facts are established : first, that running drill is perfectly feasible ; next, that as no unfavorable results have anywhere arisen from it, and as in many cases it has proved very beneficial to the men exercised, the practice may be considered as one conducive to the well-being of the men, and also as a valuable agent of sanitation.

“ The Cavalry do not undergo running drill, but, on the other hand, a new and health-giving exercise has also been introduced in that arm of the service. I refer to the development given to swordsmanship in the Cavalry, which involves instruction in, and a course of fencing, single sticks, and other exercises, both mounted and dismounted, all tending, from the exercise they afford, to develop the men's health, strength, muscle, and nerve.

“ During the past year it has not been possible to collect statistics likely to prove of use, as military gymnastics cannot be said to be yet properly established. But now that some of the gymnasia are ready, and that the system will be regularly carried out, it will be possible to ascertain pretty accurately the effect of the practice on the general health of the men of the regiment so exercised. Beneficial results have always hitherto attended the course of instruction in gymnastics as applied at the small regimental gymnasia, and it may safely be anticipated that the advantages, both physical, sanitary, and moral, conferred on the men by the large covered gymnasia will be proportionately greater.

“ It would be desirable to compare the general health of regiments having gymnasia with those not so exercised. Also to compare the sanitary condition of regiments that have been trained for a year with their condition in previous years, and by these means, making due allowance where necessary, conclusive evidence sufficient for all purposes may be obtained as to the general effects of the system on the health of British Troops in India.”

76. The usual order showing the results of the soldiers' gardens during 1868 has not yet appeared. In General Orders by His Excellency the Commander-in-Chief, dated the 4th August 1868, the accounts are given of the workshops of Her Majesty's British Regiments serving in this Presidency for the year 1867. Twenty-nine regiments appear in this statement, four of

Soldiers' gardens and workshops.

Cavalry and 25 of Infantry. Excepting in the case of two, the 1st Battalion, 5th Foot, and the 94th Regiment, there was in each case a balance at credit at the close of the year. The most prosperous workshop was that attached to the 103rd Regiment, which showed a credit of nearly 10,000 rupees, and next that of the 3rd Battalion Rifle Brigade, in which the balance in hand was over 7,500. Many of the others showed 3,000 and 4,000 rupees profit on the year's transactions.

77. Since last year two further reports showing the progress made in the analysis of water in Military Cantonments have been received. In the first of these, the third report issued by Dr. Macnamara, and dated the 2nd June 1868, the results of operations at 21 stations are tabulated and commented on, and special reports are also appended on the water supply of Umballa, of Agra, Morar, and Jhansi. These reports, the first by Dr. Sheppard and the other three by Dr. May, have been prepared with great care, and they ably and fully discuss the various points connected with the important questions to which they refer. Dr. Macnamara's fourth report refers to the analyses conducted at 26 stations. Special accounts of the water supply of Peshawur and Attock by Dr. Center and of that of Jullundur and Ferozepore by Dr. Lackersten are appended. There is also an able report on the water supplies of Nusseerabad, Ajmere, and Morar by Dr. May. The supply for Jubbulpore, Saugor, Nowgong, and Nagode is discussed by Dr. Thomson. There are also notes on the waters of the Bareilly, Sultanpore, and other stations.

78. The general results of the analyses show that the water supply in most stations is naturally good and sufficient, but that in many places defects in conservancy arrangements and in the construction of the wells lead to the presence of impurities. In a few stations, such particularly as Umballa and Nusseerabad, the supply is very defective, and measures for securing an increased quantity are much required. The whole question of what specific measures ought to be adopted by the Government as the result of the analyses of the last three years is now under consideration, and a scheme will shortly be submitted, showing what appears in each case to be required, what wells should be closed as hopelessly impure, what ought to be done to correct those whose improvement is possible, and what means ought to be adopted in those stations in which the present supply is either generally of inferior quality or defective in quantity.

79. Orders have already been issued that the various suggestions and recommendations made by Dr. Macnamara for preventing the pollutions of wells, the water of which is used for drinking, should be carefully attended to. In particular an order has been issued, directing that all such wells, both in cantonments and encamping grounds, shall be provided with covers. The experimental use of pumps at the stations of Hazareebaugh, Dinapore, Lucknow, Cawnpore, Bareilly, Agra, Jubbulpore, Meerut, Rawulpindee, and Sealkote has also been sanctioned. A standard design of bathing platform has also been recommended, which may be adopted with advantage.

whenever wells are used for bathing purposes and are apt to be fouled in consequence. It has also been suggested that where river water is available, arrangements should be made for its experimental use.

80. At the suggestion of Mr. Lepel Griffin, the Punjab Government recommended that the method of storing cool water in wells which is commonly practised in Persia and some parts of Afghanistan should be tried at Meean Meer. The system is thus described :—“ A large well should be selected, which should be carefully cleaned of dirt in November. At the beginning of December a cut should be made from the canal or river to the well, and water should be allowed to flow into the well from 4 A. M. till 6 or 7 A. M. The oftener this filling process is repeated the better, during the coldest weather in December and January. The well should then be covered with beams, mats, and earth, and it is as well to build over it a thatch to prevent the direct rays of the sun from striking on it. The well may be opened on the 1st May as far as necessary for drawing water, and its water will retain its ice cold temperature throughout the hot season. As canal and river water brings with it a certain amount of foreign matters in suspension, it improves the water to allow it to flow at night into an earthen reservoir adjoining the well, and in the early morning when the earthy matter has settled down to draw it off into the well. In Persia the wells are often filled with snow instead of river water, but the result is the same.” The proposal was submitted to the Government too late to admit of its being carried into effect during the current year, and the distance of the wells from the canal at Meean Meer involved considerable expense. Further information has been asked for to show the comparative temperature of the wells so filled and protected with that of those in ordinary use, and if the results should be satisfactory the scheme is deserving of a trial in some stations where a well can be selected conveniently situated for the purpose.

81. The questions of how water might best be stored in tanks so as to preserve its purity, and how far growing plants exercise any deleterious influence on it, which had been the subject of correspondence in this country, were referred for the opinions of the best authorities in England. In forwarding them the Army Sanitary Commission remarks :—

“ These principles, which have been arrived at by experience in this country, indicate what ought to be done in the case of the Vehar Water Works (on which this reference has arisen), and in all similar cases in India.

“ We recommend therefore—

(1).—That means, such as those stated above, be taken to preserve the water in the Vehar Lake as free as possible from decaying organic matter proceeding from the gathering ground and from the margins of the lake, or from conduits.

(2).—That all water supplied to Bombay from the lake be drawn from the lake through fine wire-screens, so as to prevent floating

matters and fish entering any conduit, and that such water in all cases be sand-filtered and passed into a covered pure-water tank or reservoir in immediate connexion with the filters previous to distribution through the mains.

(3). That the filters and covered pure-water reservoir should be at the Bombay end of the pipe conduit if practicable. The contents of the covered reservoir should be equal to a day's supply of the population.

(4).—That similar measures be adopted for preserving the purity of sources of supply of all open water tanks in which water is stored for domestic use, and that all open-tank water be sand-filtered and stored in covered expense tanks or cisterns, from which it can be drawn pure for consumption.*

“If these precautions be diligently carried out, the other questions raised in the papers regarding the propriety or not of permitting the growth of water-plants and fish in impounded reservoirs and tanks will become of little importance.

“Living vegetation if not allowed to exist to such an extent as to interfere with the supply-works, and if care be taken to remove all dead vegetation from the surface and banks, and, if possible, from the bottom of the lake, is rather an advantage than otherwise, unless the plants be poisonous. The vegetation exists for a specific purpose, and that is the conversion of dead organized matter into living forms.

“This is one of Nature's processes for purifying water. The flow of impure water over clear rocky channels is another. Both agencies are useful in their place and degree.

“In the same way, the existence of fish in impounded reservoirs or tanks is not necessarily injurious. On the contrary, their tendency is to preserve that balance in vital forces throughout the body of water which tends to reduction of dead organized matter. Certain kinds of water-plants and fishes are perhaps better adapted for these ends than others, and this question may very well be studied in India.

“As regards the depth from the surface at which water should be drawn from the Vehar Lake, it should be taken as near the surface as possible.† This is a matter of secondary importance if the water is filtered, but there would be no difficulty in arranging the outlets, so that water might be drawn from any depth, or always close to the surface, if considered desirable.”

82. In last Annual Report it was remarked that a filter suitable in all respects for barrack use remained to be invented. Dr. Macnamara's filter for Barracks. An apparatus has since been devised by Dr. Macnamara on the Danchell principle which appears to fulfil all requirements, and which has been tried with success both

* It is not, of course, intended that the open storage tanks or reservoirs should be covered, but only the tanks or cisterns into which a day's supply of filtered water is received for use.

† The water tower in the Vehar Lake contains valves at different elevations, so that water can be drawn at any of these levels.

in the Medical College Hospital, Calcutta, and also in the Barracks at Fort William. It consists of a stout cylindrical zinc vessel 18 inches high by 10 inches in diameter, closed at the upper end except where the delivery pipe is attached. When the filter is placed in a tub or cistern, and supported a few inches from the bottom of it, the water contained in the tub or cistern passes into the filter, percolates through sand and well burnt animal charcoal, and is delivered by means of a pipe which is commanded by a stop-cock. The experimental results have been so satisfactory that a more extended trial at several Military Stations both in the Presidency and in the other Divisions of the Army have been ordered, and should they prove equally successful, the general introduction of this form of filter which in every respect is so superior to that now in use, will doubtless take place.

83. The cystic disease in ration cattle which has of late attracted so much attention in the Punjab has been found in a very large number of them during the past year. According to the most recent return extending to the end of April 1869, it appears that large quantities of meat have been rejected on this account, particularly at Jullundur, Meean Meer, Rawulpindce, and Peshawur. Throughout the Punjab, during 1868, one thousand and thirty-eight head of cattle or 6·12 per cent. of those tendered for rations, have been found infected. The total rejections since the cysts were first brought to notice in 1866 have amounted to 2,053, and of these 675 were rejected during the first four months of the current year. This very large and increasing destruction of meat involving great loss to the State, and also a serious difficulty in supplying food for the troops, has rendered it necessary to modify the orders previously in force, and it is hoped that with the precautions now enjoined all risk of engendering tape-worm may be obviated, while at the same time the wholesale destruction of meat may be avoided. A careful investigation into the whole question of the beef cyst and its connection with the development of tape-worm in the human body has also been ordered.

84. The supply of cots on the trestle principle which was ordered from the Roorkee Workshops has to a great extent been completed. Some deviations from the standard have been brought to the attention of the Government, and they will be avoided in the cots which will hereafter be made up. An excellent suggestion to try the fibre of the aloe plant, which was made by Mr. Campbell, the Superintendent of the Roorkee Workshops, has been referred to the Government of the North-Western Provinces, in order that the necessary steps may be taken to give it a fair trial. The aloe fibre, which is strong, durable, clean, and elastic, would make an admirable stuffing for bedding, and its cultivation may be undertaken by the jails, where it can also be prepared for use. The question of what other materials are best suited for barrack bedding is still under consideration. In connection with this subject it may be mentioned that the issue of English blankets for European Troops in hospital has been sanctioned in place of the Native blankets lined with chintz which have hitherto been in use. The whole question of hospital equipment is still undetermined.

85. As mentioned in the Second Annual Report, the experimental use of the dry-earth system of sewage in British Regiments was ordered at Rawulpindee, Lucknow, Dinapore, and Dum-Dum, and the results of the experiment have now been reported. The general tenor of these statements clearly establishes the superiority of the system in regimental latrines over any other which has yet been tried, and fully corroborates the joint statements and opinions which were submitted to Government by the Sanitary Commissioner and the Quarter Master General in 1865. Orders have not yet been issued, directing its adoption in all British Regiments, but it is already practically carried out, and has indeed been in use for some years past in the great majority of corps serving in this Presidency.

86. In the report on earth sewage in 1865 the Sanitary Commission took occasion at the same time to recommend that glazed earthen-ware vessels should be substituted for the iron urinals which had been hitherto in use, and which are found by experience to corrode and to give rise to unpleasant odours in spite of all efforts to keep them clean. It was recommended that the urinaries should be of the simplest description, consisting of these glazed vessels raised on a platform for the sake of convenience, and the platform covered with a layer of dry-earth. The experimental trial of this form of urinary has been very satisfactory, and has shown that the glazed earthen-ware vessels are in every way preferable to those of iron. The prime cost of the new urinal, moreover, is only about one-third of the annual expenditure incurred in coating the iron vessels with dhoona, a native resin, the frequent application of which has been found essential to prevent the corroding of the iron. The general introduction of the new arrangements has accordingly been sanctioned.

87. Further reports showing the value of Macdougall's Powder as a deodorizer have been received from several jails in the Punjab in which it was experimentally tried. The high cost of the powder—the price of one maund at Lahore being estimated at more than Rs. 25—offers a considerable bar to its employment as a disinfectant whenever the appearance of contagious disease renders this desirable, and arrangements should be made by which it may be supplied at a much lower rate. In connection with this subject it may be mentioned that the use of charcoal suspended in cages has been considered unnecessary for the upper stories of the new pattern barracks for European Troops, and in such cases its employment in this way will in future be entirely dispensed with. It is very doubtful whether charcoal used in this manner has really any beneficial effect.

88. The reports of the past year show that satisfactory measures had been adopted to make the best use of the tatties. Owing to the unusual character of the year they were required much later than usual, and in some cases having been destroyed when the hot season was supposed to be over, the return

Dry-earth sewage.

Introduction of glazed urinals.

Macdougall's Disinfectant.

Tatties for European Barracks.

of the heat and the delay in the appearance of the rains rendered it necessary to make up fresh ones for the hospital. In order to prevent the recurrence of this difficulty, it has now been ordered that the tatties shall be preserved till the 1st of August in each year, and that then, provided the rains have fairly set in by that date, the old khus-khus shall be destroyed.

89. The monthly sanitary reports from the different circles of medical superintendence which have been submitted to the Government by the Inspector General of Hospitals of Her Majesty's British Forces fully detail the space in barracks, hospitals, guard-rooms, and cells actually enjoyed by each occupant. They also discuss the sanitary conditions of these buildings, the state of the latrines, urinals, and ablution rooms, the drainage and sewerage, the means of cooking, the quality of the rations, water and canteen supplies, the suitability of the clothing, the nature of the duties and their influence on the health of the men, the sufficiency of the hospital accommodation, the character of the chief diseases, and any sickness prevailing among the native population. Any points requiring remedy are immediately brought to the notice of the Officers Commanding, and copy of all correspondence which has taken place with reference to any sanitary recommendations which have been made is now appended to each monthly report.

90. The errors which were apparent in the areas of barrack, hospital, and other rooms occupied by soldiers as entered in the statements appended to the monthly sanitary reports, and the discrepancies which appeared when the measurements of the same building were conducted by different authorities, led to the suggestion that an accurate measurement should be made of all Military buildings, and an order has accordingly been issued by the Government in the Public Works Department to this effect. In order to ensure uniformity in the mode of measurement, instructions have also been given that one system of estimating the area available should be followed; that no verandahs or bathrooms should be included in the calculation, not even the inner verandahs, which, owing to temporary want of space, may be in use as sleeping rooms. When these returns have been prepared, it will be apparent how far overcrowding may still exist in any set of buildings, and arrangements can be made to remedy the defect.

91. Since the date of last Annual Report the stations of Jubbulpore, Deyrah, Landour, Mussoorie, Chuekrata, and Roorkee have been inspected, and reports on the results submitted to the Government. Important recommendations have been made, especially with reference to Jubbulpore, where the drainage of neighbouring swamps, although to some extent already effected, requires much attention, and where the conservancy arrangements within the station have hitherto been very imperfect. It has also been suggested that this station presents peculiar facilities for an experimental adoption of sub-soil drainage. The troops at Jubbulpore have hitherto suffered much from fever and dysentery, diseases which are unquestionably preventible and which must be traced to the unsatisfactory condition of the cantonment and its vicinity. There can be no

doubt that with the carrying out of the improvements which have been suggested very marked benefit may be looked for in the health of the garrison.

92. In making these and other recommendations the suggestions of the War Office Sanitary Commission for the improvement of Military stations in India have been kept in view, as well as the remarks made by the Commission on many questions which have lately come under their notice. Of these perhaps the most important which has of late received attention refers to an inquiry into the circumstances under which cholera appears within its endemic limits. On this point the Commission suggest that the effect of sanitary improvements should be put practically to proof.

“For instance, they remark, let a well marked endemic locality be selected in each Presidency, and let a thorough enquiry be made into its sanitary state, including—

- (a) Surface and sub-soil drainage, marshes, malaria ;
- (b) Surface cleanliness, and cleanliness of compounds and houses ;
- (c) State of adjacent country and underwood nuisances ;
- (d) Habits of the Natives, especially as regards food, disposing of excrementitious matter, and the like ;
- (e) State of the water used for drinking and cooking ;
- (f) Amount of cholera ;

then let a rigid system of sanitary police be adopted to ensure that the people have the use of pure air and pure water by removing everything which interferes with these requisites, and let the results to health be recorded.”

The only part of the Presidency in which this inquiry can be satisfactorily conducted is Bengal Proper, and the attention of the Government has been especially directed to the subject with a view to the desired investigation being made in one or two places in which the endemic character of cholera is most marked and also in a few of the jails in which the disease has been most persistent.

93. In accordance with the instructions conveyed by the Right Hon'ble the Secretary of State, a report is being prepared to show the progress made in sanitary improvement in India since the subject first attracted the special attention of the Government. The special points on which information is desired are the arrangements which have been made for introducing in the medical service the sanitary provisions contained in the regulations issued by Lord Herbert, under date the 7th October 1859 ; how far it has been found possible to give effect to the recommendations made by Commanding Officers for removing causes of disease pointed out by Medical Officers in barracks and cantonments ; what organization is proposed to secure the health and cleanliness of towns and villages under each Government ; what steps have been taken to give effect in each Presidency and Administration to the recommendations contained in the “Suggestions in regard to sanitary works required for improving Indian stations” and other matters of importance. Replies have not yet been received

either from Bengal or Oude, but when these provinces have furnished the desired data, the information called for by the Secretary of State will be supplied with as little delay as possible.

94. Since last report two very important changes have been carried out in the constitution of the Sanitary Department with the Government of India. In the first place the Statistical Officer has been removed from the Indian Medical Department and attached to the Sanitary Commissioner. This change is calculated to be productive of most excellent results. The most important part of the work of the Statistical Officer relates to European Troops, but under the arrangement previously in force he was attached to an office which had no concern with them. Communication between him and the Sanitary Commissioner, although necessarily constant, was conducted with great difficulty and not unfrequently with most inconvenient delay. The Statistical Office is now brought into immediate relation with the Sanitary Department. The facts on the basis of which all real reforms must be instituted are communicated with the least possible delay, and reference on innumerable questions which would hardly have been possible before, is now carried on with facility and with great advantage to the public service. The importance of Dr. Bryden's services has been repeatedly brought to the notice of the Government and has been fully recognized. I cannot speak too highly of them and of the great value of the assistance which he is so ready at all times to afford.

The other change in the Department is the recent abolition of the office of Secretary. The Sanitary Department with the Government of India now consists of a Sanitary Commissioner and a Statistical Officer, and these changes will, it is hoped, lead to increased efficiency.

95. Dr. Bryden's Tables commence with 1858; but as the Army, both then and also in 1859, was greatly exposed in the field, the results of these years cannot well be compared and tabulated in connection with those of the time of peace which has happily succeeded them. The period between 1860 and 1869, however, will embrace ten years of very valuable statistics, and I propose accordingly with next Sanitary Report to submit a series of tables prepared by Dr. Bryden to illustrate the health of the European Troops, of the Native Troops, and also of the Prisoners during that time. Facts drawn from an accurate record of the experience of a series of years cannot fail to throw much light on our knowledge of Indian diseases, on the peculiar dangers which beset the European Soldier during his time of service, and on the measures by which these dangers may best be obviated. There are many questions of extreme importance which might have been dwelt on in this report, but which I have reserved until they can be considered and discussed in the light of more extended statistics. Among such questions I may instance the comparative healthiness of stations over a series of years, and the circumstances to which differences in the results are due; the comparative health of regiments serving

in India for any length of time, and the causes which have appeared to affect the statistics of each ; the effect of climate on recruits and young soldiers immediately on arrival in India, and the measures which should be adopted to prevent any undue sickness and mortality among them ; the effect of convalescent depôts, and how far they have been beneficial ; the tour of stations which appears best calculated to secure the greatest amount of health in a body of men during their Indian service, and other matters of great practical importance.

It is only of very late years that we can be said in India to have laid the foundation of any solid advance in measures for the prevention of disease by accumulating accurate data year by year regarding the diseases which are the chief causes of sickness and mortality.

96. In the preparation of this report I have endeavored, as far as possible, to carry out all the suggestions which have been made for rendering it as full and complete a record of the sanitary history of the year as possible.

Preparation of Annual Report.

Dr. Goodeve's recommendation regarding cholera maps to illustrate the annual prevalence and progress of that disease has not been lost sight of ; but when so large an area is concerned, the details cannot be given in the form he proposes without much difficulty. Indeed without a map on a scale very much larger than could be conveniently appended to a report, it would be impossible to show all the particulars he desires. I shall endeavor, however, to indicate on the map which has been specially prepared for this report by the Surveyor General of India the area over which cholera has appeared during 1868. The details of its appearance and fatality in individual towns and villages among the general population have not reached me, and maps to illustrate them must be prepared by the local Sanitary Commissioners in their respective provinces. The area occupied by epidemic cholera during 1868 has fortunately been limited, and before the lapse of the current year, in which it has unhappily again been prevalent and threatens still further extension, I hope to have devised some more perfect arrangement by which the general history of the disease in each year may be more clearly and accurately mapped.

97. In subsequent years I hope to carry out some further improvements in the tables and also some extension of them. The employment of a larger type will facilitate reference to the figures, and this change will be delayed only in order that the ten-year's tables may be uniform. The hill stations will be shown by themselves in places of being incorporated in the different provinces to which they now belong. Cholera Tables will be added to illustrate the annual extent of the disease among all classes taken as a whole, European Soldiers with their women and children being included together in one, and Native Troops and Prisoners in another. To these it is hoped that reliable data regarding this and other diseases among the general population in all parts of the country may soon be added.

Improvements in Statistical Tables.

98. In conclusion I have only to express my regret that the preparation of the first portion of the report has been so unduly delayed. When I state that the last paper required to complete the statistics of European Troops was not received till the 7th of this month, it will be apparent that it could not have been submitted at an earlier date.

15th July 1869.

PART II.

NATIVE TROOPS.

99. The general statistics of the regular Native Army for 1868 are given in Table I. The average strength calculated on the figures furnished in the weekly returns amounted to 40,770 men actually present with their regiments. As explained in previous reports this standard must be taken as the basis of calculating the amount of sickness and mortality occurring under the observation of the Medical Officers. The diseases which affect the large proportion of men absent on furlough or sick leave cannot be ascertained, and the causes of the deaths which take place among these absentees cannot be known with sufficient accuracy to admit of their being tabulated. In ordinary years the strength during the hot season and rains is at a minimum, but during the past year the return of the Abyssinian Field Force caused a considerable increase in July, followed in the succeeding month by a diminution in August consequent on the large proportion of them who were allowed to proceed on leave. The statistics of the Abyssinian Field Force while employed out of India are not included in the general tables, and they will be referred to in a subsequent paragraph of this report.

100. Out of an average strength of 40,770, the deaths numbered 444, or in the proportion of 10·89 per 1,000. Compared with previous statistics as shown at p. 118 of the third Annual Report and with the death-rate of 1867 as given in the tables for that year, the results of 1868 have been remarkably favorable, and present a lower ratio than in any of the past seven years. The minimum annual mortality during that period was 11·98 in 1866. In the other years it varied from 13·06 to 16·79 per 1,000. Such are the results when the deaths of sepoys serving with their regiments alone are considered. The total number of casualties during 1868, including those which occurred with regiments and those which occurred among men on leave, so far as they have been ascertained, amounted to 742, and taking the total strength of the Native Army, including absentees, as 45,844, the mortality has thus amounted to 16·19 per 1,000. This result does not compare so favorably with that of previous years, in which the total loss of the regular Native Army by death has fluctuated from 15 per 1,000 in 1864 to 20·31 per 1,000 in 1861. In making these comparisons, however, it must be remembered that much difficulty is experienced in ascertaining all the deaths which occur among men on leave, and as greater attention is now devoted to this point than used to be, it is not improbable that the higher ratio of casualties reported among those away from their regiments may be accounted for to some extent at least by more complete and accurate returns.

101. It is regarding the mortality of the 444 men who died with their
 Chief causes of mortality. regiments that particulars can alone be given;
 and the diseases arranged in the order in which
 they have contributed to this death-rate of 10·89 per 1,000 stand thus :—

					Number of Deaths.	Ratio per 1,000.
DIED IN HOSPITAL.	Fevers ... ..	...	...	...	97	2·38
	Respiratory diseases ... ..	...	...	...	55	1·35
	Cholera ... ..	...	...	...	45	1·10
	Dysentery ... ..	...	...	...	43	1·06
	Diarrhœa ... ..	...	...	...	37	0·91
	Atrophy and Anæmia ... ..	...	...	...	30	0·52
	Phthisis Pulmonalis ... ..	...	...	...	21	0·74
	Spleen disease ... ..	...	...	...	9	0·22
	Heart disease ... ..	...	...	...	9	0·22
	Scurvy ... ..	...	...	...	8	0·19
	Wounds and Accidents... ..	...	...	...	7	0·17
	Hepatitis ... ..	...	...	...	7	0·17
	Apoplexy ... ..	...	...	...	7	0·17
	Small-pox ... ..	...	...	...	5	0·12
	Dropsy ... ..	...	...	...	4	0·10
	All other causes ... ..	...	...	...	45	1·10
	Died out of Hospital ... ..	...	...	...	15	0·37
TOTAL					444	10·89

The first four diseases—fevers in their various forms, respiratory affections, cholera and dysentery—together caused a death-rate of 5·89 or more than one-half of the total mortality of the year. Of these, however, none proved more than ordinarily fatal.

102. These great causes of mortality, indeed, as they affected the vital statistics of the Native Army during 1868, show a general, and in some cases a very marked, diminution compared with the results of previous years. Since 1861, when the new Native Army was established, the ratios of deaths from cholera, fevers, bowel complaints, and respiratory diseases have been as follow :—

Deaths per 1,000.

	1861.	1862.	1863.	1864.	1865.	1866.	1867.	1868.
Cholera	4·09	2·51	1·52	1·67	2·83	2·54	3·17	1·10
Fevers	3·97	4·12	4·25	3·84	4·38	2·78	3·04	2·38
Dysentery and Diarrhœa	3·16	2·45	2·93	2·29	2·62	2·01	1·77	1·97
Respiratory diseases	1·51	1·64	1·44	1·83	1·15	·91	·97	1·35
TOTAL FROM ALL CAUSES	16·79	13·97	14·63	13·13	14·72	11·98	13·06	10·89

103. The monthly proportion in which the deaths occurred in 1868, presents a remarkable contrast to the case of European soldiers. The deaths among Europeans, as has been already stated, occurred chiefly during the hot months; the ratio of mortality in them showing a remarkable increase over that of the other months and of the general average for the year. But among Native troops the case is altogether different. With them the greatest mortality occurred in the cold season; chiefly in the months of December and

January. This remark applies not only to the statistics of 1868, but also to those of previous years. To some extent the result is vitiated by the absence of information regarding the months in which deaths among men on leave took place, but the contrast is still striking as showing the comparative immunity of Native soldiers from heat-influences as a cause of acute disease. This fact appears not only in the general statistics of the regular Native Army as shown in the first table, but also in its several groups and in the two irregular forces for which separate tables have been prepared. With the statistics of the current year added, so as to complete the ten years' period, the relative monthly liability of Native soldiers to disease and deaths may be determined in the same way as it has been to some extent fixed in the statement which has been given with reference to European troops founded on the statistics of five years.

104. Out of the average strength of 40,770 men, 47,939 cases of sickness were treated, or a ratio of 1175 per 1,000. The **Extent of sickness during 1868.** largest monthly proportion of admissions, 127 per 1,000, occurred in September, the ratio in October being very nearly the same. The minimum of 75 per 1,000 was reached in February. The daily average number under treatment fluctuated between a minimum of 1,254 in April and a maximum of 2,039 in November, or, taken according to ratios, the average daily number sick per 1,000 varied from 31 in April to 48 in November. Viewed in connection with the figures already given regarding the months in which European and Native troops severally suffer the highest mortality, these statistics show great differences in the results of the climatic influences affecting the two bodies of men. The average constant sick-rate for the year was 46 per 1,000, the equivalent of a daily sick list numbering 1,834. The proportion of admissions and the ratio of daily sick per 1,000 during 1868 compare favorably with the data of previous years under the same heads, as will be seen from the following statement showing the results in each of them since the reorganization of the Native Army :—

Y E A R.						Admissions per 1,000.	Daily average sick per 1,000.
1861	...	...	...	...	...	1169	40
1862	...	...	...	...	...	1384	41
1863	...	...	...	...	...	1476	46
1864	...	...	...	...	...	1388	43
1865	...	...	...	...	...	1475	44
1866	...	...	...	...	...	1385	44
1867	...	...	...	...	...	1447	46
1868	...	...	...	...	...	1175	37

105. The more important diseases have already been considered in relation to the extent of mortality occasioned by each. Chief forms of sickness. The order which they take as causing sickness is very different.

	Number of Cases.	Ratio per 1,000.
Fevers ...	21,508	527·0
Wounds and Accidents ...	5,000	122·0
Abscess and Ulcer ...	4,295	105·0
Dysentery ...	3,007	73·0
Rheumatism ...	2,365	58·0
Diarrhoea ...	1,981	48·0
Veneral diseases ...	1,763	43·0
Respiratory diseases ...	1,593	39·0
Eye diseases ...	883	21·0
Spleen disease ...	261	6·0
Scurvy ...	158	3·0
Hepatitis ...	99	2·0
Cholera ...	93	2·0
Phthisis Pulmonalis ...	56	1·0
Small-pox ...	45	1·0
Apoplexy ...	12	0·3
Dropsy ...	12	0·3
All other causes ...	4,808	117·0

The figures here shown present also a remarkable contrast to the ratios of admissions under the same heads occurring amongst European troops, but these will be discussed more conveniently and with more accuracy of comparison when the results in different parts of the country are considered separately, and these statistics compared with the sickness among British soldiers quartered over a similar area.

106. The first eight diseases named in the above list comprise the great causes of admissions into hospital, and the extent to which they have appeared in the regular Native Army during 1868 may be compared with their prevalence in previous years.

Chief forms of sickness in 1868 compared with previous years.

Admissions per 1,000.

DISEASES.	1861.	1862.	1863.	1864.	1865.	1866.	1867.	1868.
Fevers ...	595	765	773	693	747	684	744	527
Wounds and Accidents ...	73	99	120	119	118	106	131	122
Abscess and Ulcer ...	109	134	124	149	131	147	121	105
Dysentery ...	61	67	85	73	100	72	80	73
Rheumatism ...	46	51	48	56	61	63	63	58
Diarrhoea ...	45	45	59	63	80	58	60	48
Veneral diseases ...	63	59	49	49	51	54	45	43
Respiratory diseases ...	26	24	29	36	37	40	35	39
All other causes ...	...	...	...	...	...	...	...	...
TOTAL ...	1,169	1,384	1,476	1,388	1,475	1,385	1,447	1,175

107. In the first group are comprised fifteen stations situated in Bengal Proper and in the north-eastern part of the Lower Provinces. They are given in detail in Table XI, and their geographical position can be ascertained on reference to the map. The force quartered at these places during 1868 averaged 7,961 men. Among them sickness and mortality were both considerably higher than the average for the Native Army as a whole. The admissions equalled 1,294, and the daily number in hospital 47 per 1,000. The death-rate was 21·10, or nearly double that for the Native Army generally. The prevalence of

dysentery, rheumatism, and respiratory diseases chiefly contributed to these results. A reference to the details given in Table X shows that these high ratios were chiefly due to a few stations. At Fort William, Dum-Dum, Berhampore, Dacca, Gowhatty, Nowgong and Julpigoree, the admissions amounted, respectively to 1,866, 2,109, 2,904, 1,805, 1,511, 1,494, and 1,586 per 1,000. At several of them the death-rate is even more deserving of notice. The mortality of 41·93 at Fort William, 26·79 at Alipore, 29·08 at Dum-Dum, 33·53 at Barrackpore, and 34·48 at Nowgong, are particularly high. Very few of the deaths were due to cholera. Fevers, bowel complaints, respiratory diseases, with atrophy and anæmia, account for 93 out of the 168 deaths reported in this group. The number of men sent away to their homes for change of climate was also much greater in the case of the regiments serving in this group than in any other part of the country. The 9th Native Infantry at Barrackpore in this manner invalided 41 men, the 14th Native Infantry 45 men, and the 2nd Native Infantry at Alipore 72 men. To complete the sanitary history of this group, it is also necessary to consider the number of deaths which took place among absentees, most of which are doubtless traceable to illness contracted before leaving their regiments. In several of the regiments occupying the stations in question, the absent deaths were numerous, and in one instance more so than those which occurred with the corps. In the 9th Native Infantry at Barrackpore, there were 14 casualties among men when on leave, in the 18th Native Infantry at Bhaugulpore 12, and the 2nd Native Infantry had no less than 25 against 18 among those present. Table XIV furnishes these and other particulars regarding each regiment.

108. In the second group containing thirteen stations, the statistics of the year were much more favorable. The admission rate was 1,087, the daily sick 33, and the mortality only 6·75 per 1,000 of average strength. Great variations, however, are apparent in the returns from the different stations comprised. At Fyzabad the admissions were only 585 per 1,000, at Banda they were 3,368. Similar marked differences appear in the death-rate. At Fyzabad it was only 1·38, at Dinapore 7·58, and at Benares 14·21 per 1,000. Fevers and dysentery were here again the chief causes of sickness and death. At Benares fever cases were 198 per 1,000, at Allahabad 540, and at Banda 1,659. Dysentery varied from 16 admissions at Lucknow to 197 per 1,000 at Allahabad. These variations can be studied in Tables X, XI, and XII, and further details regarding individual corps can be learned on reference to No. XIV. Including absent deaths the ratio of mortality in the 5th Cavalry at Seetapore was only 2·02 per 1,000, in the 16th Regiment Native Infantry at Fyzabad 3·78. On the other hand, in the 34th Regiment Native Infantry at Lucknow the ratio was 14·27; in the 13th Cavalry at the same station it was 20·12. The highest death-rate in any corps in this group was 22·76 in the 4th Regiment Native Infantry at Allahabad.

109. The third group comprises nine stations occupied by Native troops and also a detachment of Sappers and Miners employed during greater portion of the year in making the road leading to the new hill station of Chuckrata. The total average force

included amounted to 5,189 men. Out of this number the cases of sickness were 4,478, or in the proportion of 863 per 1,000, and the daily sick 154, or 2·97 per 1,000. The mortality, according to the statistics shown in Table IV, was 8·86 per 1,000, or, including absent deaths, and calculated according to the number borne on the rolls, it amounted to 18·07. No disease was very prevalent considered as a whole. Fevers were only 337 per 1,000, and no other form of sickness caused so many admissions as 50 per 1,000. Both at Delhi and in the Chuckrata Road detachment, however, the number of cases treated and the daily average proportion in hospital were high. At Delhi the admissions were 1,559, and the daily sick 51 per 1,000, the chief cause being fever, which contributed 1,028 per 1,000 of the total admissions. In the Chuckrata road detachment the daily sick numbered 42, and the admissions 1,246 per 1,000. At Moradabad, Shajehanpore and Bareilly the returns of sickness were very favorable, and in none of these stations did the daily list exceed an average of 23 per 1,000. At Moradabad out of 120 men there were no deaths. At Meerut and Roorkee they were less than 5 per 1,000, but at Chuckrata road they were 17·28 and at Delhi 23·05 per 1,000. Including absent deaths, as shown in the Regimental Table, the returns from some of the regiments quartered at these stations are very unsatisfactory, especially those of the 27th Native Infantry at Bareilly, which lost 30·22, and the 17th Native Infantry at Delhi, in which the death-rate was so high as 56·58 per 1,000.

110. In the fourth group are included the regular Native force garrisoning Agra and the stations of Central India. From Statistics of the fourth group. this portion of the Native Army the returns have been unusually favorable. With an admission-rate of 1,297 and a daily sick list of 44 per 1,000, the deaths out of a strength of 6,118 were only 28, or 4·57 per 1,000. Nor is this ratio unduly increased as in other groups by the addition of the casualties which occurred among absentees, for, taking these into account, the proportion was only 9·13. These returns are all the more favorable when it is remembered that the regiments in this group frequently suffer much, especially from fever, and that the corps at one or two stations suffered much from this cause during 1868. At Augur and Mehidpore, which are generally garrisoned by Bombay Corps, but which were temporarily occupied during the Abyssinian war by the 26th Native Infantry from this Presidency, the death-rate equalled 23·36. The admissions at the latter station were 2,470 per 1,000 during 11 months, and of these 2,089 were from fever. At Deolie also the admissions were high, numbering 2,184 per 1,000, due chiefly to fever, dysentery, and rheumatism. The mortality at this station, however, only equalled 4·42 per 1,000, including absent deaths.

111. The fifth group embraces the Punjab, and includes regiments and detachments of the regular Native Army in fourteen stations averaging 13,120 men. Of this Statistics of the fifth group. number 4·51, or 34 per 1,000, were on an average daily in hospital. The admissions numbered 1,196 and the deaths 9·98 per 1,000. In this Table (No. VI) are included the statistics of the Hazara Force, which amounted to 4,385 men, and was engaged for three months in the field. The daily sick-rate throughout the regiments of the Punjab was generally low. At Mccan Meer it was 38 and at

Jullundur 44. At Loodianah, on the other hand, out of a body of 90 men detached from the 13th Regiment at Jullundur, the sickness and mortality were excessive. The admissions equalled 2,672 per 1,000 per annum, of which 2,037 were from fevers. A comparison of the monthly ratios of daily sick between Jullundur and Loodianah shows no great difference between the two stations until the month of October, when the proportion at Loodianah was 166 per 1,000 compared with 29 at Jullundur. In November the figures were 233 compared with 44. The fever was not only prevalent but fatal, five men having died of it in the three months, September, October, and November. The mortality in the 45th Regiment, amounting to 37·57 per 1,000, also deserves notice. Of the 18 deaths which occurred with the corps, 10 took place in November and December when marching from Peshawur to Mooltan, and five of these are returned under the head of pneumonia. The result is the more remarkable, as the regiment appears to have enjoyed very good health before leaving Peshawur.

112. The admissions in the different provinces under the chief diseases during the years 1866, 1867, and 1868 are compared in the annexed statement. The results in each for the past year compare favorably with those of the other two, for the ratio in each of them during 1868 was lower, and in some of them considerably lower, than it was in either of the previous years :—

Admissions per 1,000.

YEARS.	Cholera.	Small-pox.	Fevers.	Apoplexy.	Dysentery.	Diarrhoea.	Hepatitis.	Spleen disease.	Respiratory diseases.	Phthisis Pulmonalis.	Droopy.	Scurvy.	Rheumatism.	Veneral diseases.	Eye diseases.	Abscess and Ulcer.	Wounds and Accidents.	All other causes.	Total.
BENGAL PROPER AND ASSAM.																			
1866	13	2·0	790	0·3	136	121	2	7	56	1	1·0	14	70	49	12	157	89	132	1,658
1867	10	0·5	641	0·1	161	100	2	12	44	1	1·0	5	61	55	14	114	118	154	1,496
1868	6	0·1	506	0·5	125	79	3	8	65	1	0·6	13	78	41	19	92	99	155	1,294
DINAPORE, BENARES, OUDH AND CAWNPORE DISTRICTS.																			
1866	1	1	518	0·7	45	26	1	15	24	0·6	0·6	0·4	68	68	22	127	93	100	1,118
1867	4	1	553	0·3	55	42	1	5	27	0·5	1·0	0·3	63	56	25	124	171	112	1,245
1868	1	1	434	0·1	58	32	2	7	28	2·0	...	0·9	53	43	19	128	155	123	1,087
MEERUT AND ROHILCUND.																			
1866	0·2	2	382	...	32	35	1	4	44	0·7	0·2	0·9	69	62	33	174	97	110	1,051
1867	3·0	2	436	...	48	52	2	4	55	1·0	0·6	2·0	71	51	26	108	99	155	1,118
1868	0·8	5	337	0·2	33	25	1	8	35	0·8	0·2	2·0	49	40	22	86	97	120	863
AGRA AND CENTRAL INDIA.																			
1866	0·7	0·5	1,026	1·0	50	40	1	18	28	0·9	0·1	0·7	72	70	31	173	156	109	1,782
1867	2·0	0·9	782	0·6	48	54	1	15	23	0·2	0·4	...	62	57	20	160	142	114	1,487
1868	0·3	1·0	696	0·2	36	26	2	5	25	1·0	0·5	1·0	49	68	21	122	136	106	1,297
PUNJAB.																			
1866	...	1·0	689	0·1	57	34	2	5	39	2	0·2	2	49	40	40	133	116	87	1,299
1867	0·8	0·5	1,030	0·7	69	53	2	6	33	2	...	1	61	25	34	110	117	89	1,645
1868	0·1	0·2	583	0·3	80	55	3	5	38	1	0·2	2	56	33	25	99	117	96	1,196

113. The deaths in each province do not show the same uniform improvement. In the Agra and Central India group the Mortality in different groups compared. ratio is very favorable when compared with that of 1866 or 1867, but in all the others a lower death-rate was attained in one of other of these two years than in 1868.

Deaths per 1,000.

YEARS.	Cholera.	Small-pox.	Fever.	Apoplexy.	Dysentery.	Diarrhoea.	Hepatitis.	Spleen.	Respiratory diseases.	Heart disease.	Phthisis Pulmonalia.	Dropsy.	Scurvy.	Atrophy and Anemia.	Wounds and accidents.	All other causes.	Died out of Hospital.	TOTAL.
BENGAL PROPER AND ASSAM.																		
1866	7.03	0.51	5.20	0.20	3.87	1.94	0.20	0.10	1.23	0.41	0.82	0.20	0.61	0.92	0.61	1.33	0.20	25.38
1867	4.56	...	4.19	...	2.22	0.98	0.37	0.74	0.98	0.62	0.74	0.12	0.74	0.62	0.62	2.59	0.24	20.33
1868	2.51	...	3.51	0.38	2.12	1.63	0.50	0.50	2.89	0.38	1.13	0.38	0.88	1.51	0.13	2.26	0.38	21.10
DINAPORE, BENARES, OUDH AND CAWNPORE DISTRICTS.																		
1866	0.99	0.28	1.69	1.42	0.99	...	...	0.14	0.57	...	0.28	0.28	...	0.28	0.14	0.57	...	6.63
1867	2.73	0.27	3.00	0.55	0.55	...	0.14	0.41	0.27	...	0.27	0.41	...	0.14	0.41	0.81	0.41	10.37
1868	1.27	0.38	1.40	...	1.02	0.51	0.13	0.13	0.38	...	0.26	...	...	...	0.13	0.76	0.38	6.75
MEERUT AND ROHILCUND.																		
1866	...	0.70	1.41	...	0.47	...	0.23	...	1.41	...	0.47	...	0.23	0.23	0.23	1.64	0.47	7.49
1867	2.53	0.63	2.11	...	0.21	0.42	0.63	...	1.69	0.63	0.63	...	...	0.85	...	0.42	...	10.75
1868	0.19	0.19	1.35	0.19	0.77	0.77	0.08	0.58	1.16	0.38	...	0.19	...	0.97	0.38	1.16	0.58	8.86
AGRA AND CENTRAL INDIA.																		
1866	...	...	3.57	0.45	0.45	0.22	0.22	...	0.89	0.22	0.22	...	...	...	0.45	0.89	...	7.56
1867	0.91	...	2.00	0.37	0.55	0.91	0.18	...	0.18	...	0.18	...	...	0.18	0.18	0.73	0.37	6.93
1868	0.16	...	1.64	0.16	0.16	0.82	...	0.16	0.16	...	0.33	...	...	0.65	...	0.33	...	4.57
PUNJAB.																		
1866	...	0.54	1.61	0.09	0.27	0.27	0.18	...	0.72	0.09	0.54	0.09	...	0.09	0.45	0.72	0.18	5.84
1867	3.89	0.08	3.05	0.24	1.13	0.97	0.08	0.08	1.46	0.16	0.97	...	...	0.32	0.48	0.81	0.08	13.75
1868	...	0.07	3.15	0.15	0.84	0.69	0.07	...	1.68	0.31	0.62	...	0.07	0.61	0.23	0.92	0.38	9.68

Comparative sickness and mortality among European and Native troops during 1868.

114. A comparison of the sickness and mortality among the European and Native troops in the different groups shows the following results:—

Admissions per 1,000.

	Bengal Proper.	Dinapore, Benares, Oudh and Cawnpore Districts.	Meerut and Rohilcund.	Agra and Central India.	Punjab.	TOTAL.
European Troops	1,767	1,318	1,241	1,439	1,498	1,438
Native Troops	1,294	1,087	863	1,297	1,196	1,175

Deaths per 1,000.

European Troops	28.66	20.97	18.55	18.22	15.67	20.11
Native Troops	21.10	6.75	8.86	4.57	9.68	10.89

Several circumstances combine to render this comparison imperfect. The stations occupied by the European and Native troops in each province do not altogether correspond; in the first and fourth groups more particularly Native soldiers are distributed over a large area embracing many unhealthy localities in which there is no British soldier. On the other hand, the facilities with which sick sepoys obtain leave of absence for change of air at all times of the year are not enjoyed by Europeans. In the case of the Native soldiers, absent deaths are not included in the statement, as they are, to some extent at least, represented by the casualties among European invalids who have left India, and whose deaths do not appear in the Indian tables.

115. In consequence of these disturbing elements it will afford a more accurate basis of comparison if certain selected stations in different parts of the country which are garrisoned by both European and Native soldiers are taken and the statistics of the chief diseases at each of them considered. The year has been so free from Cholera and Small-pox that both may be omitted. It will be observed that with the single exception of Fort William the sickness among the Native troops has been much less than among the Europeans. Looking at the different forms of sickness, it appears that in several stations, Fort William, Dinapore, Fyzabad, Lucknow, Bareilly, Agra, Morar, Saugor, Jubbulpore, Ferozepore and Mooltan, fevers were more prevalent among the Natives. The immunity enjoyed by the Native soldiers from Apoplexy, Hepatitis and Venereal disease is remarkable at all the stations, and the high admission-rate from these causes, and especially from Venereal diseases, accounts in a great measure for the unfavorable results at several places in which but for them the returns among European soldiers would be very satisfactory.

Admissions per 1,000.

STATIONS.	FEVERS.		APOPLEXY.		DYSENTERY.		DIARRHOEA.		HEPATITIS.		RESPIRATORY DISEASES.		VENEREAL DISEASES.		TOTAL FROM ALL CAUSES.	
	European.	Native.	European.	Native.	European.	Native.	European.	Native.	European.	Native.	European.	Native.	European.	Native.	European.	Native.
Fort William	853	451	23	...	110	203	88	156	58	1	78	214	250	96	1,355	1,806
Dinapore	125	228	7	...	79	19	121	10	80	1	60	27	319	18	1,580	645
Buaries	212	198	...	...	15	65	84	28	36	1	49	39	306	58	1,402	778
Allahabad	553	540	5	...	35	197	113	85	83	1	59	63	396	30	1,848	1,621
Fyzabad	112	290	8	...	32	53	37	6	30	2	44	9	176	20	819	585
Lucknow	153	459	7	...	42	16	53	31	41	1	47	18	247	36	1,223	1,008
Bareilly	153	178	1	...	19	10	36	16	51	2	16	25	262	33	835	635
Cawnpore	306	215	4	1	16	21	48	4	26	1	63	10	260	43	1,292	607
Delhi...	1,179	1,028	10	...	29	33	53	36	122	...	156	15	166	23	2,395	1,559
Meerut	348	171	8	1	24	29	90	12	52	...	105	51	131	59	1,270	614
Agra	159	198	3	...	11	32	38	26	39	...	59	19	153	67	993	746
Morar	692	832	7	...	5	27	65	20	38	...	77	27	184	48	1,697	1,325
Saugor	692	721	2	1	36	20	70	52	78	1	65	20	166	62	1,682	1,352
Jubbulpore	380	568	1	...	22	41	83	13	99	2	55	25	189	43	1,308	1,004
Umballa	677	129	7	...	4	21	44	2	36	1	81	3	92	19	1,497	854
Ferozepore	490	505	8	...	17	21	58	7	29	...	89	55	127	31	1,419	1,229
Meeran Meer	851	474	17	...	30	33	116	23	41	3	130	22	150	44	2,109	1,062
Mooltan	303	395	5	...	11	30	32	42	19	...	73	28	192	26	1,271	891
Peshawar	1,149	863	3	2	23	103	93	77	47	4	70	47	201	25	2,028	1,528

116. If the mortality at these stations among European and Native soldiers be compared, the results are as shown in the following statement. Here, however, it is unadvisable to indicate the relative mortality from each disease, as the ratios become so small as to be unappreciable. Absent deaths belonging to the Native Regiments are not included :—

Deaths per 1,000 of Strength.

STATIONS.	MORTALITY FROM ALL CAUSES.	
	European.	Native.
Fort William	24.47	41.93
Dinapore	25.76	7.58
Benares	19.61	14.21
Allahabad	28.57	20.38
Fyzabad	10.86	1.38
Lucknow	22.57	6.78
Bareilly	16.78	7.28
Cawnpore	19.39	5.50
Delhi	9.97	23.05
Meerut	17.95	4.01
Agra	8.81	.. ..
Morar	16.58	2.87
Saugor	28.83	13.37
Jubbulpore	28.44	2.70
Umballa	12.35	3.59
Ferozepore	9.79	3.94
Meean Meer	23.88	1.25
Mooltan	15.50	3.52
Peshawur	14.32	13.05

The results here are still more markedly in favor of the Native, and indicate how much more serious are the ailments which attack British soldiers.

117. The extent of sickness and mortality in the European Army in India is materially influenced by the number of men who are annually invalided to England, some as unfit for further service and therefore recommended for discharge, and others who are suffering from disease which change of air is likely to ameliorate. A similar system obtains in the Native Army. Men are annually invalided as unfit for further duty, while others are allowed leave of absence on sick certificate to visit their homes. In this respect, these sick leaves differ from the invaliding for change enjoyed by the European soldier, that they are not confined to one particular period of the year, but are given from time to time as necessity arises. During 1868, the permanent and temporary leaves from invaliding in the European and Native Armies of Bengal have been as follow :—

	Invalided for change of air.	Ratio per 1,000.	Invalided for discharge from the service.	Ratio per 1,000.	Total.	Total ratio per 1,000.
European Soldiers	984	31.19	421	13.34	1,405	44.53
Native Soldiers	922	20.11	648	14.13	1,570	34.24

118. Cholera, as already stated, was little prevalent during 1868, and the troops Cholera among Native in 1868. Native troops suffered from it but slightly. In Table XIII details are given showing the stations

and also the months in which it appeared. Throughout the Native Army there were in all 93 cases, of which 45 were fatal. The only epidemic deserving notice took place in the month of January among the men of a wing of the 7th Regiment Native Infantry proceeding in boats from Dacca to Cachar. Of the 20 cases 11 were fatal between the 4th of January, when the first man was seized, and the 19th of the same month. Throughout the Punjab only one case is returned, and as this was not fatal and its history has not been given, it may be doubted whether it was true cholera. The occurrence of a few scattered cases at Allahabad, Cawnpore, and Lucknow is of interest in connection with the prevalence of the disease during the current year. The total admissions from cholera during 1868 were in the proportion of 2·3 per 1,000 and the deaths 1·10, results more favorable than in any of the previous seven years.

119. Small-pox has been at its minimum in 1868 and does not require any special mention. The returns regarding fevers **Fevers among Native troops in 1868.** are also particularly favorable and show a smaller proportion of cases and a lower death-rate than in any of the previous seven years. The admissions from this cause have equalled 527 per 1,000 compared with 744 in 1867 and 684,—the lowest ratio of former years,—in 1866. The death-rate from fevers of 2·38 per 1,000 in 1868 also contrasts favorably with 3·04 in 1867 and 2·78 in 1866. In all the other years the ratio was considerably higher. This result is in great measure to be attributed to the diminution of fevers among the troops in the Central India stations, where, apparently, owing to a small rain-fall, epidemic influence was at a minimum. The fluctuations to which the proportion of fevers in each year is subject in different provinces may be studied with reference to the figures shown in the tabular statement given in paragraph 103. The fourth column of Table X illustrates the differences in this respect which existed at individual stations in 1868. Banda usually stands highest, but during the past year its ratio of 1,659 cases of fever per 1,000 is below Berhampore with 2,119, Mehidpore with 2,189, and Loodianah with 2,037. Umballa with only 129 cases per 1,000 stands lowest, Allygurh, in which the ratio was still more favorable (127), not having been occupied during the whole year.

120. Dysentery and Diarrhœa among Natives may be most conveniently considered together. The same difference is not observable between these affections in their case **Dysentery and Diarrhœa among Native troops in 1868.** as in the case of Europeans, and the two diseases frequently run the one into the other in such a way as to render any distinction more nominal than real. The admissions from these diseases during 1868 amounted to 122 per 1,000, a ratio somewhat higher than that of 1861 and of 1862, but lower than that of any of the other years with which comparison can be made. The death-rate of 1·23 per 1,000 is the lowest yet attained. Very marked differences are apparent as regards the extent of dysentery and diarrhœa in different stations. In the Lower Provinces, they are specially prevalent, and during 1868 the ratio of admissions in many of the stations situated in those portions of the Presidency was extremely high. On referring to the Table (XI) it will be observed that the contrast between the proportion of admissions from these diseases in the stations at

the top of the list is in marked contrast with the figures given below. At Fort William, Alipore, Dum-Dum, Dacca, the ratios of 359, 412, 384, and 365 cases per 1,000 are worthy of notice. At Umballa they equalled only 23 per 1,000.

121. Respiratory diseases merit some notice. During 1868, 1,593 cases of such affections were treated, or 39 per 1,000 ; the death-rate from the same cause being 1·35. In some of the stations in Lower Bengal, the admissions from this class of diseases were high, especially at Fort William, where they amounted to 214 per 1,000. The statistics of the Native troops forming part of this garrison during 1868 are particularly unsatisfactory ; the sickness and deaths being out of all proportion to the average of the Army generally.

122. Venereal diseases have averaged 43 per 1,000 during the year. In 1867, the ratio was 45 ; in 1866, 54 ; in 1865, 51 ; in 1864, 49 ; in 1863, 49 ; in 1862, 59 ; and in 1861, 63 per 1,000. These figures contrast remarkably with the admissions among European troops. In the Table already given with a view of comparing the amount of sickness among European and Native troops occupying the same station, the prevalence of venereal diseases among the one body of men as compared with that among the other very strikingly appears. The average number of cases among British soldiers for 1868 was 199 per 1,000. In some stations the ratio was as high as 300, and in one or two nearly 400 per 1,000. But if the details of Table XI be examined, it will be seen that the highest ratios of admissions in the Native Army were 160 at Jhansie, 136 at Hazareebaugh, and 96 at Fort William, and these were altogether exceptional cases. In some stations they were remarkably few, as at Buxa Dooar, where they were only 7 per 1,000, and at Bukloh 3. It is worthy of notice that at some of those places in which the disease was most prevalent among European soldiers the Native soldiers were very free from it. For example, at Dum-Dum the proportion was of Europeans 374, of Natives 40 ; at Dinapore 319 compared with 18 ; at Allahabad 396 compared with 30. In connection with the measures to be adopted for checking venereal disease among the European soldiers these facts are of value, for they show a very small proportion of cases among sepoys occupying the same stations in which British soldiers have suffered most, and they show also that the Lock Hospitals have had very little influence on the extent of the disease among Native troops, which, although small, is certainly capable of reduction.

123. A comparison of the different stations and of individual regiments has already incidentally been made in the examination of the diseases specially prevalent, but it will be advisable to glance at the general results in their relation to localities. The comparative healthiness of separate cantonments may be judged either by the ratios of admissions, of daily sick or of deaths. According to the first of these standards, Banda presents the most unfavorable aspect, for the cases of sickness numbered 3,368 per 1,000. In Berhampore, which comes next, they were 2,904, in Mehidpore 2,470, in Loodianah 2,672 per 1,000 ; in Deolce 2,184 ; and in Dum-Dum 2,109. In none of the other stations

did they amount to 2,000. The most favorable return was at Bukloh, where the cases of sickness were in the proportion of 469 per 1,000. At Mehidpore the daily sick equalled 92 in 11 months; at Berhampore 90; the next highest was 70, at Alipore. At Umballa, during 10 months, the daily sick was in the ratio of only 11 per 1,000. Tested according to mortality, the most healthy stations, omitting those at which the strength was small, were Segowlie, Agra, and Jhansic, where no casualties occurred during the year. At other places the death-rate varied from 1.25 per 1,000 at Meean Meer to 41.93 at Fort William.

124. Full particulars regarding each regiment are given in Table XIV—
 the average strength borne on the rolls, the average strength actually present during the year, the causes of sickness and mortality, and the ratios of loss by death and invaliding. The total present strength, 40,940, given in this Table differs slightly from that shown in Table I, where it is entered as 40,770. This discrepancy of 140 men is due to the fact that the figures, as shown in Table I, are taken from the weekly returns, while those of the regimental table are taken from the Annuals. The discrepancy is thus due to some errors on the part of the Medical Officers, but in so large a number the difference is immaterial. It may again be stated to avoid any confusion that the ratios of total deaths, that is to say, the deaths occurring among men both with their regiments and when on leave are calculated on the total strength of Native soldiers borne on the rolls, while the mortality occurring with regiments and which alone can be distributed over its proper headings of disease is calculated on the average strength actually present. The regiments are divided into groups corresponding with those of the provincial Tables, so that the particulars out of which these provincial Tables are composed may be clearly seen. In future years, I propose to add some information regarding the different races of which each corps is composed, and the parts of the country from which they have chiefly been recruited. The nationality of the men mainly has a material influence on the health which they enjoy. The Punjabee or Puthan quartered in Fort William may be said to be serving in a country nearly as foreign to him as it is to the British soldier, and it will be interesting to note the influences of climate on different races of Asiatics.

125. The Central India Irregular Force during 1868 comprised an average strength of 3,177. The stations which they occupied will be seen in Table XIII, and the regiments of which it was composed are detailed in Table XIV. In this local force the results were very satisfactory. The daily sick averaged 31, the admissions 989, and the deaths 8.81 per 1,000. In these figures the Bhopal Contingent is not included, as through some unexplained cause no weekly returns are received from this corps, and the particulars with regard to it required to fill in the Table are thus wanting. As shown in the foot note, the deaths of the year, including this Contingent, make the ratio 8.65. The mortality from fevers was somewhat higher than in the regular Native Army, but there was no Cholera, and the deaths from bowel complaints and respiratory diseases were remarkably few. Although all the deaths are probably

recorded in the returns, it is evident that cases of sickness in outlying detachments are frequently omitted. A reference will be made to the Inspector General of Hospitals with a view to remedy this defect and to procure weekly returns from the Bhopal Contingent as furnished by every other regiment.

126. The statistics of the Punjab Irregular Force are also very favorable.

Statistics of Punjab Irregular Force in 1868.

The daily sick numbered only 29, the admissions 1,077, and the deaths 7·47 per 1,000. In this are not included 19 men who were killed in action.

The casualties from diseases taken separately were also small, and excepting the 3rd Sikhs at Peshawur in which the deaths equalled 30·18, the returns from individual regiments show no unusual mortality. The high death-rate in the 3rd Punjab Infantry was due chiefly to men killed in action.

127. The Native Regiments, both regular and irregular, which took part in the Hazara Campaign are noted in Table XIV,

Statistics of Hazara Field Force.

and a reference to Table X will show the ratio of daily sick in these two portions of the Hazara

Field Force taken separately. The statistics do not call for any special remarks except as showing that the troops enjoyed excellent health.

128. The Native Regiments which went on service to Abyssinia are also

Imperfect statistics of the Native Regiments belonging to the Abyssinian Field Force.

indicated in Table XIV. The loss they sustained during their absence from India is stated in a foot note to this Table, but no satisfactory statistics are

available regarding the extent of sickness. Many cases of illness appear to have been treated in field hospitals and on board hospital ships, and from these no returns have been received.

129. In connection with the statistics of the Native troops of the

Contagious fever among muleteers returning from Abyssinia to the Punjab in 1868.

Abyssinian Field Force, the outbreak of contagious fever which occurred among the muleteers returning to the Punjab from Abyssinia deserves

notice. A very able and interesting report regarding it has been furnished by Dr. Gray, who was Civil Surgeon at Mooltan when the muleteers passing up the Indus arrived at that station, and he superintended all the arrangements required for the care of the sick, and the precautionary measures which were adopted to prevent the spread of the fever. The disease was undoubtedly the same as that which has proved so fatal in the jails of Upper India, and which has been described in previous reports as "contagious fever." From the date of leaving Bombay till they left quarantine in Mooltan and Lahore, out of a strength of about 4,500 men, 404 died. The Levies left the Punjab in November and December 1867 and returned in the months of August, September, October, and November 1868. They had been raised chiefly in the Rawul Pindee, Lahore, Umritsur, and Mooltan districts, and consisted of all the different creeds, nationalities and castes that are to be found in these parts of the country. Neither in going to Abyssinia, during their stay there, nor on their return to Bombay, was there any unusual sickness among them. At Bombay the arrangements for their shelter were imperfect, and many of them were much exposed in consequence, but the sickness

and mortality were still small. Nothing unusual occurred on the passage from Bombay to Kurrachee; but during their short stay at this latter place, one or two cases of the peculiar fever which afterwards proved so fatal appear to have occurred and to have escaped notice. On their way up the river in boats the space allotted to them was generally in excess of that allowed by regulation. Some of the Levies lost many men during this period, but there was no connection traceable between the amount of space and the extent of the disease in different detachments; some of those which suffered most severely enjoyed a larger area per head than those which suffered less. As soon as they arrived at Mooltan arrangements were made to provide hospitals and attendance for the sick and to place all of them in quarantine—measures which were attended with excellent results. It is difficult to explain the origin of the disease. There is no evidence to show that it originated in over-crowding or any other insanitary conditions. The history of the epidemic rather points to the occurrence of some isolated case which was undetected, and from which the others sprung.

130. A similar explanation attaches to the case of some of the dooly bearers who also went on service with the Abyssinian Force. In the Ship *India*, which sailed from Calcutta on the 6th December 1867, with 419 kahars on board, and arrived at Aden on the 4th January 1868, 46 died during a passage of 30 days. Two of the crew also died. On arrival at Annesley Bay five days afterwards 87 of the bearers and 3 of the lascars were ill, and of these several were in a hopeless condition. Three of the crew afterwards died. The deaths, so far as could be gathered, were all due to the same variety of fever as proved so fatal to the returning mulcteers. In the opinion of some of the authorities, the disease was due to over-crowding and insufficient clothing, but the history of the outbreak did not accord with such an explanation. Cases had occurred within a very few days after sailing, and the occurrence of this peculiar form of fever in the coolie camp at Calcutta and the danger of its appearing on board ship had been brought to notice before they embarked.

A similar outbreak occurred among a party of bearers returning from Abyssinia in the Ship *Ophir*. Out of 422 men who embarked at Zoulla on the 2nd June 1868, 27 died before reaching Calcutta on the 23rd July. The disease was attributed to the circumstances that weakly men had been over-crowded on board, that the regulation space was insufficient, that the decomposition of the mats on which the sand ballast rested increased the noxious effluvium of the bilge water mixing with the sand, and that the foul atmosphere arising from these causes could find exit from the hold only through holes opening into the deck occupied by the kahars. But the *Ophir* had carried 428 kahars from Calcutta to Annesley Bay without any unusual sickness, and owing to there being a greater number of mules and horses on board on that occasion, the space available for the men had then been less. A careful inquiry, moreover, showed that while the vessel was at anchor in Annesley Bay, six of the crew had died, six more died between Zoulla and Bombay, and on reaching that port nine were sent to hospital, of whom two died; 14 deaths thus

occurred among 50 of the crew. The evidence regarding the precise nature of the disease among them was defective, but there was every reason to believe that it was the same as that which subsequently appeared among the kahars. The history of these cases taken in connection with that of the epidemics in jails shows clearly the necessity of detecting and isolating the first case.

131. Tables embracing the statistics of the European Army for the ten years 1860 to 1869, will be supplemented with others regarding the Native Army and also regarding the prisoners. From 1861 to 1863 only a general *resumé* can be given regarding them, as the more detailed statements commence with 1864. It will be more convenient, however, to prepare the Tables for the ten years ending 1869 for all three classes showing all the details which can be given, and leaving a succeeding period of ten years to be rendered still more full and complete with the additional particulars which a more perfect system of statistics will render available. The statistics of 1860 to 1869, though somewhat defective for the earlier years, will still be of great value; they will afford a most valuable addition to the sanitary history of the period, and will serve to throw light on the experience of European soldiers serving in this Presidency during the same time.

132. The last return required to complete the annual statistics of the Native Army was received on the 30th July. It has therefore been impossible to prepare and submit this portion of the Sanitary Report at an earlier date. I trust that in succeeding years such arrangements may be devised as will secure all returns being in the hands of the statistical officer not later than the 15th February of the year following that to which they refer. It is extremely desirable that all the returns should be received at an early date, and that it may thus be possible to review the statistics of one portion of the community in the light of the information regarding all the others. It is difficult to trace the history of disease, and especially of epidemic disease, by considering any isolated series of facts, or to draw from them the practical lessons which they teach.

August 6th, 1869.

PART III.

JAILS.

133. THE jail population of the Bengal Presidency averaged 55,287 prisoners throughout the year. This number is slightly in excess of the strength for 1867, in which it amounted to 54,962. In 1866, owing chiefly to the effects of severe famine in great part of the Lower Provinces, the number was 57,322, the highest average of any year since the mutinies. Compared with the years previous to 1866, the number of prisoners shows a considerable increase. Commencing with 1862 the average strength was 52,871; in 1863, 52,401; in 1864, 52,598; and in 1865, 54,337. A comparison of the different groups in 1867 and 1868 shows an increase in the second, third and fifth, and a diminution in the population of the other two.

	1867.	1868.
Bengal Proper	15,692	15,160
Dinapore, Benares and Cawnpore ...	16,940	17,400
Nagpore and Central India	4,421	4,440
Rohilcund, Meerut and Agra	7,403	7,231
Punjab	10,506	11,056
TOTAL ...	<u>54,962</u>	<u>55,287</u>

The great increase in the number of prisoners in the later months of the year is worthy of notice. In January the strength was only 53,246, but in the month of November it had risen to 58,315. The details given in Tables II to VI show that this addition of nearly 5,000 was in a measure due to all the groups, but in particular to the first, second, and fifth. No explanation has been given of this fact. In 1867 the differences in the jail population were less than half what have just been noted, and in that year the population stood at its maximum in January, and gradually fell to a minimum in December.

134. Out of 55,287 prisoners, 1,605 or 29 per 1,000 were daily under treatment. In October and November the constant sick-rate equalled 31 and 32 per 1,000, but in all the other months of the year it showed very trifling variations having never fallen below 26 nor risen above 29. In 1867 it fluctuated between 26 in February and 42 in September. The total admissions of 1868 give a ratio of 941 per 1,000; the monthly minimum of 66 occurring in December and the maximum 91 in October. In the year previous the monthly ratios varied from 60 in February to 129 in September. During 1868, 1,674 prisoners died, or a proportion of 30·28 per 1,000. The monthly numbers here again show a similarity, which is remarkable when compared with the very different manner in which the mortality is usually distributed. During 1868

the number of deaths varied from 103 in June to 174 in November; but in 1867 the extremes were 109 in June and 256 for November; and in 1866 they were 211 and 420.

135. The results of 1868 as compared with those of previous years are extremely favorable. Whether the daily number of sick, the admissions into hospital, or the deaths per 1,000 be taken as the standard of comparison, the statistics show a vast improvement on those of any previous year, and this improvement is all the more gratifying that it has been steadily progressive, and that it thus has all the appearance of resting on a sound basis of sanitary reforms. The facts of the last 10 years may be conveniently compared in the annexed statement.

Statement showing the sickness and mortality among the prisoners in the Bengal Presidency during the 10 years, 1859—1868.

YEAR.	Average Strength.	PER 1,000 OF AVERAGE STRENGTH.		
		Daily Sick.	Admitted.	Died.
1859	46,733	52	1,336	82.77
1860	46,348	57	1,491	110.81
1861	50,915	48	1,314	96.65
1862	52,871	46	1,346	66.75
1863	52,401	48	1,368	85.81
1864	52,598	41	1,227	70.19
1865	54,337	35	1,154	57.66
1866	57,322	33	1,133	61.91
1867	54,962	32	1,079	38.32
1868	55,287	29	941	30.28

The statistics of 1868 are thus very satisfactory. They show a daily sick-rate of 29 contrasted with 52 in 1859, and 57 in 1860, a ratio of cases of sickness amounting to 941 compared with 1,491 in 1860, and a death-rate of 30.28 compared with 110.81 in 1860.

136. Arranged in the order in which they have proved destructive to life, the chief diseases affecting prisoners in 1868 stand thus:—

Dysentery and Diarrhoea	..	...	...	12.06 per 1,000
Fevers	...	...	...	4.36 "
Respiratory diseases	...	...	...	2.59 "
Atrophy and Anæmia	...	...	...	2.50 "
Cholera	...	...	...	2.48 "
Phthisis Pulmonalis	...	...	...	1.64 "
Dropsy	...	...	...	.67 "
Wounds and Accidents	...	...	...	.38 "
Apoplexy	...	...	...	.38 "
Spleen disease	...	...	...	.33 "
Heart disease	...	...	...	.21 "
Scurvy	...	...	...	.09 "
Hepatitis	...	...	...	.09 "
Small-pox	...	...	...	.04 "
All other causes	...	...	...	2.46 "
TOTAL	...	...	...	30.28 "

It is remarkable to how few diseases the great mass of the mortality is due. Dysentery and Diarrhoea taken together, and they cannot be considered separately, have proved fatal to nearly one-half of all those who died, and if the ratio from fevers be added, more than one-half of the total casualties are accounted for.

137. Arranged in the order in which they have severally contributed to the sickness of the year, the diseases are placed differently.

Chief forms of sickness in 1868.

Fevers	379 per 1,000
Dysentery and Diarrhoea	188 "
Abscess and Ulcer	107 "
Wounds and Accidents	38 "
Respiratory diseases	30 "
Rheumatism	24 "
Venereal diseases	21 "
Eye diseases	16 "
Atrophy and Anæmia	11 "
Spleen disease	7 "
Cholera	5 "
Scurvy	4 "
Phthisis	3 "
Dropsy	2 "
Small-pox	1 "
Hepatitis	1 "
Apoplexy	7 "
All other causes	102 "
TOTAL	941 "

138. The first group includes 52 jails situated in Lower Bengal and Assam. The prison population here averaged 15,160. Out of this number 581 or 38 per 1,000 were constantly sick, 1,367 were admitted out of every 1,000, and the deaths equalled 52·90. These results bear very unfavorable comparison with those of the other groups; in particular the death-rate is very high and nearly double that of any of the others. Still, unfavorable as they are, the statistics of this group during 1868 show a considerable improvement on those of previous years, as will be seen in the annexed statement.

Statement showing the sickness and mortality among the prisoners of Lower Bengal and Assam during the 10 years, 1859—1868.

YEAR.	Average Strength.	PER 1,000 OF AVERAGE STRENGTH.		
		Daily sick.	Admitted.	Died.
1859	15,359	54	1,543	105·15
1860	14,335	61	1,659	136·10
1861	13,924	57	1,502	87·69
1862	14,692	57	1,634	78·61
1863	15,087	56	1,704	92·73
1864	14,441	51	1,636	67·10
1865	14,598	47	1,639	58·85
1866	16,794	47	1,616	107·24
1867	15,692	41	1,408	56·65
1868	15,160	38	1,367	52·90

The high ratio of 22·29 deaths per 1,000 from Dysentery and Diarrhœa in this group deserves special mention. The mortality of 7·26 from Cholera, of 5·28 from Atrophy and Anœmia, of 3·03 from Phthisis, of 3·26 from Respiratory diseases, and of 2·11 from Dropsy is also greater than that of the average from the same diseases taken throughout the jails generally.

139. Owing in a great measure to peculiarities of climate and of race, it is to be feared that the vital statistics of prisoners in those parts of the country represented by the jails of this first group can never show a sickness or death-rate approaching the favorable returns of the other provinces. As a whole the ratios under both these heads are still high, and a reference to the details given in Tables VIII and IX shows that at many of the jails comprised within this first group sickness and mortality during the past year were great. At Sumbulpore the cases of sickness were 2657 per 1,000; at Pubna 3020; at Dinagepore 3863; and at Malda 4579. At twelve out of these fifty-two jails more than 50 prisoners died out of every 1,000 of average strength, and in some of them the death-rate far exceeded this ratio. At Purneah it was 80 per 1,000; at Sumbulpore and Alipore 82; at Rajshahye 110; at Dinagepore 119; at Bograh 123; and at Rungpore 165 per 1,000. The diseases which chiefly caused this great loss of life are detailed in Table XI. Of the 802 deaths only 110 were due to cholera, and in some of the jails in which the mortality was highest, for example at Rungpore, not a single case of the disease occurred. Dysentery and Diarrhœa were the chief causes of death. At Alipore 114 deaths out of 201; at Hooghly 12 out of 22; at Backergunge 28 out of 52; and at Rungpore 43 out of 65 were due to this disease. Doubtless much of this mortality is to be accounted for by the condition in which prisoners were on entering jail.

140. Thirty-nine jails are included in the second group, with an average population of 17,400 prisoners in confinement during the year. The returns, as a rule, are much more favorable than those of the first group. The daily ratio of sick has been only 25, the cases of sickness 753, and the deaths 28·22 per 1,000.

Statement showing the sickness and mortality among the prisoners of the Dinapore, Benares, Oude and Cawnpore Districts during the 10 years, 1859—1868.

YEAR.	Average Strength.	PER 1,000 OF AVERAGE STRENGTH.		
		Daily sick.	Admitted.	Died.
1859	8,605	57	1,313	115·51
1860	9,511	69	1,460	140·15*
1861	11,398	48	1,147	76·07
1862	13,975	38	1,045	51·31
1863	14,664	42	1,174	97·73
1864	15,450	31	930	67·12
1865	16,343	30	915	67·67*
1866	17,088	27	902	62·85*
1867	16,940	27	869	36·72
1868	17,400	25	753	28·22

The results of 1868 are particularly favorable when viewed in relation to the excessive sickness and mortality which have prevailed in former years, when the ratios were in some cases as high as, or even higher than, in the first group.

* Jail fever present.

Contagious fever, which has been almost unknown in the jails of the Lower Provinces, has proved very fatal from time to time among the prisoners in the Benares, Oudh and Cawnpore Districts, being generally confined to one or two jails in each year. Gondah was the only jail of this group which suffered from this disease during 1868. Here 81 prisoners fell victims to it.

141. In consequence of this great loss of life among a small body of men, the death-rate in this Gondah Jail was very much the highest in the group, having reached 154·93 per 1,000. Next comes Mozufferpore, with a death-rate of 102·39, due chiefly to bowel complaints and Anæmia. Patna, Deegah, Chumparun, Chuprah, Bustee and Futtehpore each give a death-rate somewhat above 50 per 1,000. In all the others the loss was under 50, and in some of them the returns of the year are extremely favorable. At Ghazee-pore and Mirzapore the mortality amounted to only 13 per 1,000. At Azimghur and Jounpore it was little over 6. At Baraitch and Etah only 5, and in the Futtehgurh District Jail only 3½ per 1,000.

142. Twenty-two jails are embraced in the third group, and these contained an average of 4,440 prisoners during the past year. Of this number 205, or 46 per 1,000, were daily under treatment, the admissions into hospital equalled 1,338, and the deaths 27·48 per 1,000. These results are less favorable than those of the averages for the whole jail population, but they are more favorable than those of the two groups which have been already considered, and they will bear comparison with the history of the same jails in previous years. Since 1859 the admissions and deaths among prisoners in the Nagpore and Central India group have been as follow :—

Statement showing the sickness and mortality in the Nagpore and Central India group of Jails during the 10 years, 1859-1868.

YEAR.	Average Strength.	PER 1,000 OF AVERAGE STRENGTH.		
		Daily sick.	Admitted.	Died.
1859	4,844	71	1,355	81·75
1860	4,981	61	1,428	65·04
1861	5,089	49	1,098	34·00
1862	5,316	49	1,410	39·69
1863	4,975	57	1,525	73·37
1864	5,418	47	1,316	51·76
1865	5,221	55	1,623	104·77
1866	4,956	55	1,690	65·58
1867	4,421	54	1,658	30·42
1868	4,440	46	1,338	27·48

The ratio of admissions has been higher than in 1861, and also slightly above what it was in 1864, but the daily sick-rate of 46 and the death-rate of 27 are in striking contrast to 71 and 104 the maximum ratios shown in the statement, and are more favorable than the returns of any one of the previous nine years therein recorded.

143. Although the statistics of individual jails in this group present considerable differences, they do not show such marked contrasts during the past year as have been observable in those of the two first groups. The highest

Statistics of individual jails in third group.

death rate has been 65 per 1,000 among a small body of prisoners at Sehere. In other jails a somewhat high death-rate is accounted for by the same cause, while in others out of a few prisoners there has been no casualty whatever. Taking those jails in which the numbers are sufficient to form a proper basis of calculation, the highest mortality was 39·43 at Nagpore, and the lowest 12·82 at Jhansi. The admission rates, as shown in Table IX, are generally favorable. Dysentery and fevers were the chief causes of sickness and death. Out of 122 casualties, 78 are accounted for under these two heads.

144. Only seventeen jails are included in the fourth group, but their population amounted during the past year to 7,231.

Results in the fourth group of jails during 1868.

The results here have been remarkably favorable.

The daily sick have numbered only 16 per 1,000, the admissions 489, and the deaths 16·87. Compared with the results of the nine previous years these ratios stand as shown in the annexed statement.

Statement showing the sickness and mortality in the jails of the Agra, Meerut and Rohilcund Districts during the 10 years 1859—1868.

YEAR.	Average Strength.	PER 1000 OF AVERAGE STRENGTH.		
		Daily sick.	Admitted.	Died.
1859	7,196	49	1,456	86·71
1860	7,695	58	1,868	170·50
1861	9,669	35	1,399	183·68
1862	8,534	47	1,514	97·02
1863	8,043	45	1,292	82·80
1864	7,641	33	969	74·73
1865	7,693	18	656	33·15
1866	7,787	15	571	19·96
1867	7,403	16	586	23·64
1868	7,231	16	489	16·87

The statistics of 1868 present a remarkable contrast to those of such years as 1860 and 1861, in which the sickness and mortality attained such a fearful height. The extremely unsatisfactory results of those years were due chiefly to cholera and contagious fever, and from both of these scourges the jails of this group have happily been free during 1868. The health of the prisoners in this province is all the more satisfactory that the improvement has been progressive. In considering these results, however, the peculiarly non-epidemic character of the year must be borne in mind. The daily average number of sick and the admissions in each month throughout the year differ but slightly, and are free from those marked increases in the latter part of the year which are so generally observed.

145. In other groups individual jails have been selected on account of the great sickness and mortality which have prevailed in them, and as illustrative of the general influences which more or less pervaded them all,

Remarkable healthiness of individual jails in this group.

but in this group the illustrations must be rather those of remarkable health. The highest rate of admissions was at Almorah, where it amounted to 1,333 per 1,000; the highest mortality 37·04 also took place at this jail. In the large central prison at Agra, with an average of 1,802 prisoners, the admissions were only 310 per 1,000, and out of this large body only 35 deaths occurred, or in the

proportion of 19·42 per 1,000. At Etawah, out of a strength of 228 only one death took place; and there was also but a single casualty out of 301 prisoners in the Meerut District Jail, the ratios resulting being only 4·39 and 3·32 per 1,000.

146. In the Punjab group are 29 jails, and here also the statistics of 1868 have been very satisfactory. Out of an average strength of 11,056, the daily sick were 23, the cases of illness 790, and the deaths 12·39 per 1,000. A comparison with the statistics of each of the previous nine years shows that in none of them have the prisoners enjoyed such health.

Statement showing the sickness and mortality among the prisoners in the Punjab during the 10 years, 1859—1868.

YEAR.	Average Strength.	PER 1000 OF AVERAGE STRENGTH.		
		Daily Sick.	Admitted.	Died.
1859	10,729	40	970	22·28
1860	9,826	37	1,020	21·98
1861	10,835	46	1,273	31·59
1862	10,354	39	1,170	29·69
1863	9,632	43	1,126	36·03
1864	9,630	44	1,243	35·77
1865	10,482	29	981	34·92
1866	10,697	25	893	18·32
1867	10,506	28	1,028	24·66
1868	11,056	23	790	12·39

The lowest sick-rate, the lowest admission-rate, and a death-rate lower by one-half than any attained during the previous nine years must be regarded as eminently successful. In the earlier years, in the Punjab as well as in the other groups of the Upper Provinces, contagious fever has been extremely fatal, and much of the great mortality has been due to this cause. During 1868, as will be presently seen, only one Jail in the Punjab suffered from this disease, and but for this outbreak, which must be regarded as preventable, even more satisfactory results would have appeared.

147. In the Rawul Pindee Jail, in which this fever appeared, only 10 deaths occurred from it in 1868, but, as will presently be seen, the mortality from this cause during the current year has been very much higher. The total mortality in this jail during the past year was 29·68 per 1,000. In the Female Jail at Lahore, it was 40·00, and this was the highest ratio of the province. In the Lahore Central Jail, it was only 14·59; at Umritsur 11·21; at Goordaspore 8·99; at Sealkote 6·64, at Goojrat 4·00, at Sirsa and Jhelum 3·7 per 1,000. The health of the prisoners in the Punjab during the year has been remarkable, as shown both by the generally low rate of casualties and also by the small ratio of admissions into hospital. As shown in Table VIII, the greatest proportion of admissions, 2,146, was at the Lahore Female Jail, but this ratio, as well as that of deaths in this prison, both of which are the highest in the Punjab, may partly be explained by the small strength, amounting only to 150, and therefore liable to lead to erroneous conclusions. At Peshawur, Loodianah and Kohat the admission rates of 1,740, 1,650 and 1,388 were also high. On the other hand, the small amount of sickness in many of the jails, such as 213 per 1,000 at Ferozepore, 144 at Goojrat, and 109 at Shahpore are deserving of notice.

148. Such striking facts as those given in the preceding paras., showing the marked diminution in sickness and mortality which have occurred among the prisoners of this presidency as a whole, and also in the different provinces of disease in which it has been grouped, illustrate how much has already been effected to improve the health of the prisoners; but the high admission and death-rates still existing in many jails indicate also how much remains to be done. In considering the vital statistics of any body of men in India, it is remarkable how few are the diseases which chiefly make up the list of sickness and death, and nowhere does this more strikingly appear than among Native prisoners. Cholera, Fevers, Dysentery and Diarrhoea, Respiratory affections, with Atrophy and Anæmia account for 608 out of 941 admissions, and for nearly 24 out of every 30 deaths per 1,000. To consider these, therefore, is to discuss the great causes of sickness and mortality among the prisoners; causes which are to a great extent preventable, and which happily have been in some considerable degree already prevented. It will be advisable then to glance shortly at the statistics of each of those important diseases during the past year, and to show their prevalence and fatality when compared with former years.

149. As will be seen on reference to Table X, Cholera has been chiefly confined to the first group of jails, and to the upper portion of the second; a very few scattered cases occurred in the third and fourth, and in the Punjab there was not one. The statistics of cholera in each of the provinces during the last 10 years stand as follows:—

Statement showing the admissions and deaths from Cholera among the prisoners in the Bengal Presidency during the 10 years, 1859—1868.

YEAR.	PER 1,000 OF AVERAGE STRENGTH.											
	LOWER BHENGA AND ASSAM.		DINAPORE, BENARES, OUDH AND CANNORE.		NAGPORE AND CENTRAL INDIA.		AGRA, MEERUT AND ROHILKUND.		PUNJAB.		TOTAL.	
	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.
1859	40	18·95	24	12·55	1	·21	2	...	·8	·09	18	8·58
1860	84	38·29	47	20·82	38	16·06	107	23·00	·1	...	57	21·66
1861	84	13·21	32	11·84	5	2·36	92	40·85	9	4·43	36	15·21
1862	28	9·94	8	·79	11	4·70	4	1·99	22	8·98	15	5·52
1863	53	20·15	56	23·94	25	10·05	14	5·72	...	..	35	14·33
1864	45	17·31	25	8·80	28	11·56	·1	...	·1	·10	22	8·56
1865	23	10·15	12	4·59	51	27·39	5·0	2·86	·5	·19	15	7·19
1866	62	29·48	24	8·25	20	11·50	·1	·1	...	...	27	12·10
1867	17	7·58	13	5·73	·7	·23	6·0	1·76	7	3·90	11	4·93
1868	17	7·26	3	1·21	1·6	1·35	·3	...	...	...	6	2·48

The totals for 1868 compare very favorably with those of any former years; both admissions and deaths have been less than one-half what they have been before. At Rajshahye and Backergunge epidemics of the disease occurred, and that at the first of these jails was severe, 59 cases and 37 deaths having taken place.

150. The statistics of Fevers throughout the jails of the presidency, as a whole, compare favorably with those of any of the preceding nine years. In none of them were the ratios of attacks and of deaths so small.

Statement showing the admissions, and deaths from Fevers among the prisoners of the Bengal Presidency during the 10 years, 1859—1868.

YEAR.	LOWER BENGAL AND ARSAM.		DINAPORE, BENARES, OUDH, AND CAWNPORE.		NAGPORE AND CENTRAL INDIA.		AGRA, MEERUT, AND ROHIL- CUND.		PUNJAB.		TOTAL.	
	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.
1859 ...	461	4.75	489	14.18	506	17.55	513	14.03	302	6.71	444	9.70
1860 ...	537	5.44	573	36.06	538	11.04	772	66.93	347	4.88	543	22.42
1861 ...	562	5.10	413	7.19	417	5.50	612	60.61	608	34.06	533	22.31
1862 ...	614	5.65	384	5.87	597	7.34	867	54.37	567	28.78	583	18.27
1863 ...	635	4.51	359	5.46	663	14.07	685	46.13	576	32.91	557	17.40
1864 ...	586	3.75	290	9.52	532	10.46	512	50.65	755	53.80	514	22.11
1865 ...	689	5.28	322	11.20	640	23.56	284	10.41	563	21.66	492	12.71
1866 ...	600	4.70	407	24.23	742	9.89	225	2.70	517	9.16	488	11.53
1867 ...	568	4.14	301	4.31	803	4.75	231	3.78	614	7.42	468	4.82
1868 ...	570	3.43	252	6.38	591	5.85	175	2.63	367	2.99	379	4.36

The heavy mortality due to fevers in former years as has been already remarked is mainly ascribable to the contagious form of the disease which has proved so fatal in the Upper Provinces. In the first group the fluctuation both in the number of cases and of deaths, is much smaller than in any of the others, because, as has been previously stated, contagious fever has in this group been almost unknown.

151. In 1867, 29 prisoners in the Gondah Jail died of this fever. Contagious fever in the During 1868, 81 have died from the same Gondah Jail. cause. The particulars of the epidemic were given in the last Annual Report in which the events of the year then passing were to some extent recorded. The fever disappeared in April and has not since recurred. The same fever is reported to have made its appearance in the Seetapore Jail in January and February of the current year, but the prompt measures adopted by Dr. Ellis were successful in extinguishing it, only two lives having been lost and a third prisoner liberated on account of the disease.

152. In 1867 the Rawul Pindee Jail also suffered and lost seven prisoners from this disease. During 1868 there were 10 deaths from the same cause, and during 1869, 88 more fatal cases. It is difficult altogether satisfactorily to trace the history of the disease. The 10 fatal cases in 1868 appear to have occurred among a gang employed on the Sohan River. The prisoners were healthy till towards the close of the year, but in the months of October and November no less than 409 admissions from fevers occurred, and in the three last months of the year, 7 out of the 10 fever deaths occurred. I have had an opportunity of perusing two reports by Dr. Lyons, the Medical Officer in charge, his Annual Sanitary Report for 1868, and a special report on the fever in the current year, dated the 5th May 1869. In the first of these he writes—

“During the drought last year the river fell very low, and its stream was turned into a narrow artificial bed by embankments in order to facilitate the building of the piers and arches of the bridge. A partial stagnation of the water was the consequence, and was probably the cause of the illness which ensued. Almost every prisoner fell ill and the jail was practically broken up for the two final months of the year. A large number died, and many were released for severe sickness in the hope of saving their lives, but in many cases in vain. Of the prisoners who survived, few are likely to be fit for hard labor for many months, and many, I should say, are broken in constitution for the remainder of their lives. The sickness was not limited to the prisoners, but was equally felt by the jail officials and the burkundazes. The darogah, the mohurrir and head jemadar fell ill, and were long in recovering. A large number of burkundazes were rendered unfit for duty. The free coolies employed on the bridge likewise suffered. There was no other disease of an epidemic nature which prevailed during the year.

In the main jail a distinct case of relapsing fever occurred amongst the old residents, in which the jaundiced condition of the conjunctivæ was well marked. The case, on detection, was removed into a quarantine barrack, and on two or three of the other occupants of the barrack becoming affected, the whole gang at the time in the barrack was removed into camp, which measure had the effect of stopping the disease. I have no doubt that this disease occurred spontaneously in this instance, and was probably due to the crowding of the jail with debilitated and unwholesome prisoners transferred from the Sohan Jail in order that they might obtain the shelter and comforts available in the main jail.”

In the second report, writing of the epidemic in the current year (1869), Dr. Lyons traces its commencement to one case occurring on the 6th of January. Several others immediately followed. In the month of February the spread of the fever is reported to have been almost universal amongst the prisoners. Owing to the want of camp equipage the inmates of the jail could not be removed to tents, but by the end of the month they were accommodated in temporary huts which had been erected outside. In a day or two wet weather set in, and as the huts were not water-tight, the prisoners were sent back to the jail. The number of cases then rapidly increased, and there was heavy mortality (52 deaths) during March. In the end of the month tents were procured, the numbers within the jail were reduced, and sickness diminished. Dr. Lyons has no doubt that the fever was contagious. It spread not only to the attendants, but also to persons not resident in the jail, whose duties brought them in contact with the sick prisoners. Dr. Lyons remarks that the “separation of the affected from the healthy, and the thinning of the number within the jail, were the means specially relied on for checking the progress of the epidemic. These objects were carried out to the fullest extent practicable with the means

at command." With regard to the probable cause he believes that "the epidemic was due to undue crowding"; but the history of the jail shows that in former years the numbers had been higher, and yet the health of the prisoners was excellent. The explanation altogether fails to account for the epidemic, as it has failed in every other case in which such an explanation has been attempted. There can be little doubt from an attentive consideration of all the facts, that the disease was in the jail in the year previous, that after a period of dormancy, as is commonly the case, it broke out afresh, and that an early detection and separation of the first cases might have saved much loss of life.

153. The comparative prevalence of Dysentery and Diarrhœa in different jails, and in the same jails in different years, forms an excellent test of their sanitary condition. There is no class of diseases, as has been remarked in former reports, which is more capable of reduction by proper management, and there is none the existence of which in any great degree shows that the state of the prisoners as regards some important requisite of health is unsatisfactory. During 1868 some jails have suffered greatly from these affections, but the general statistics of the year show a very gratifying reduction in them, both over the presidency generally and also in each group into which it has been divided, as will be seen from the annexed statement.

Statement showing the admissions and deaths from Dysentery and Diarrhœa among the prisoners in each group of jails, and in the jails of the Bengal Presidency as a whole, during the 10 years, 1859—1868.

YEAR.	LOWER BENGAL AND ASSAM.		DINAPORE, BENARES, OUDH, AND CAWNPORE.		NAGPORE AND CENTRAL INDIA.		AGRA, MERRUT, AND ROHILCUND.		PUNJAB.		TOTAL.	
	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.
1859 ...	366	50·91	331	62·87	217	31·58	246	40·44	162	8·01	279	39·65
1860 ...	412	60·90	340	55·93	208	20·08	261	41·45	163	8·55	297	41·17
1861 ...	346	44·17	270	40·62	127	14·35	231	53·57	203	26·76	255	38·47
1862 ...	402	40·63	231	32·06	173	18·43	153	24·02	171	12·46	248	27·94
1863 ...	418	47·13	333	50·46	209	34·37	137	18·28	150	15·05	282	36·53
1864 ...	360	27·01	236	36·24	179	20·20	89	8·51	118	14·44	221	24·03
1865 ...	337	23·88	240	38·45	223	29·12	105	10·66	79	4·77	214	23·21
1866 ...	376	46·09	167	21·01	240	24·62	78	6·68	76	2·43	205	23·25
" ...	314	21·92	201	17·36	182	17·19	89	8·65	105	5·62	198	15·23
" ...	332	22·29	174	11·61	146	11·71	62	5·67	88	3·08	183	12·06

In the first group the admissions and deaths from dysentery and diarrhœa were still high, but the casualties due to this cause during the last two years compare very favorably with the statistics of the eight previous years. In all the other groups there has been a marked advance, and the statistics of dysentery and diarrhœa in the presidency as a whole, contrast very favorably with their previous history. In certain jails, as may be seen in Tables IX and XI,

the proportion of cases and of deaths due to this class of diseases has been still very high. Of these may be cited Howrah, Malda, Dinagepore, Patna, Backergunge, Mozufferpore, and Sehere.

154. The proportion of Respiratory diseases is much smaller than that of the other great affections hitherto noticed. The same diminution in the ratios of admissions and deaths, under this head, is not therefore to be looked for. The returns for 1868 under this head are relatively as favorable, when compared with a series of years, as in the other cases. In each province there has been a marked diminution, and the ratios of admissions and deaths from respiratory diseases during 1868 are, as a whole, more favorable than of any other year with which comparison can be made.

Statement showing the admissions and deaths from Respiratory diseases among the prisoners in each group of jails, and in the jails of the Bengal Presidency, as a whole, during the 10 years, 1859-1868.

YEAR.	LOWER BENGAL AND ASSAM.		DINAPORE, BENARES, OUDH, AND CAWNPORE.		NAGPORE AND CENTRAL INDIA.		AGRA, MEREUT, AND ROHILCUND.		PUNJAB.		TOTAL.	
	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.
1859 ...	86	6.25	36	5.45	41	6.81	72	6.53	32	2.05	58	5.24
1860 ...	63	5.65	33	5.15	44	2.21	51	8.71	35	2.75	47	5.07
1861 ...	48	4.96	27	3.16	24	2.36	35	4.66	29	4.61	34	4.18
1862 ...	41	4.77	22	2.86	34	2.26	21	3.39	26	2.80	29	3.40
1863 ...	48	3.91	31	4.23	32	3.42	25	2.36	25	3.43	34	3.63
1864 ...	52	3.25	15	1.94	34	3.31	21	2.62	26	3.53	30	2.83
1865 ...	50	4.25	16	1.65	37	4.40	29	1.95	20	1.43	30	2.61
1866 ...	45	5.12	12	1.64	58	5.04	22	1.41	32	2.06	31	3.00
1867 ...	50	5.61	18	1.83	52	3.84	27	2.16	28	2.85	33	3.31
1868 ...	5	3.76	16	1.84	47	2.03	23	3.04	29	2.08	30	2.59

The number of cases of admissions from diseases occurring in many of the jails still requires attention, as they indicate, not so much acute inflammatory affection, as cases in which the lungs have suffered in a generally lowered standard of health.

155. The results of 1868 are all the more satisfactory, that the improvement has been general; that the health of the prisoners, not only over the whole presidency, but in each group into which it has been divided, bears very favorable comparison with the past; that there has been a diminution, not in one disease only, but in all those diseases which generally prove so prevalent and fatal among prisoners, and that this improvement has been to a great extent steady and progressive. Other diseases might be singled out for comparison, but if further investigation is desired it can easily be instituted by a careful comparison of Dr. Bryden's valuable tables from year to year.

156. The question of providing quarantine accommodation for new arrivals has been discussed in previous Annual Reports, and how far such a measure can practically be

Quarantine in jails.

carried into effect has been under the consideration of the Government. It would certainly be very desirable to have adequate quarantine wards in every jail, and even in every lock-up, but the outlay would be very great. In small jails the changes which occur in the population are proportionately, and in many of them, indeed, absolutely, much more numerous than in the large prisons, and this fact presents a difficulty of no small magnitude. At the same time it shows that the large prisons in which the numbers are great, and in which quarantine is therefore all the more necessary, can be protected in this manner at a comparatively trifling cost. "In the central jails" it is remarked in the Government Resolution—"the average number of admissions within the given period of 15 days is small in proportion to the total number of prisoners, and therefore, in central jails, provision should be made for the temporary segregation of new arrivals. But instead of fresh arrivals being put in barracks calculated to hold six or eight persons, it would be far better to put each individual into a separate cell, so far as such a disposition may be practicable without serious expense."

"As in the larger district jails, the number likely to be affected is also large compared with the number of admissions, some rule for the provision of quarantine accommodation should obtain. In such cases the time passed in jail pending the trial, should, if in separate confinement, be reckoned as a part of the 15 days' isolation. The admission of such a principle in the calculation will very much diminish the amount of quarantine accommodation to be provided.

"In smaller district jails the necessity for the provision of such accommodation is not so urgent, but segregation may be carried out so far as is possible under existing arrangements. When new jails of whatever class, however, are hereafter built, the provision of observation wards will be easy, and as the total number of prisoners held within their walls will be the same, whether the wards be built or not, the additional expense of providing means of segregation should not be very great. But in all these cases, separate cells, and not wards, should be provided for the purpose."

With special reference to Cholera, and in order that no measure may be wanting which is calculated to throw light on the manner in which it spreads, a few jails within the limits of the endemic area might be selected, and the effect of strict quarantine narrowly observed.

157. The variety in the statistical forms used by the heads of the jail department in different provinces to show the re-

Special Commission on Jail Statistical Forms.

sults of each year, has long been felt to be highly inconvenient. Whether as regards judicial, financial or sanitary data, there would be great facility in obtaining the information desired on any point if a complete and yet simple series of forms were devised and brought into general use. With a view to attain this important end a special committee was ordered by the Government to report on the question,

and to devise such forms of annual statements as shall be fit for general introduction. A series of new and complete returns has accordingly been prepared, and it is hoped that an uniform system may be adopted, commencing with the annual report for the current year.

158. The last returns required to complete the jail annual statistical tables for 1868 did not arrive till the 11th August, and it has not therefore been possible to complete this section of the report at an earlier date.

Delay in the submission of this section of the Annual Report.

14th August 1869.

PART IV.

GENERAL POPULATION.

159. In former annual reports an attempt has been made to give some information regarding the sanitary condition of the general population of the country. Since the appointment of local Sanitary Commissioners, the duty of recommending measures calculated to improve the health of the people, and of collecting all available statistics regarding the diseases which prevail amongst them, and the circumstances which appear most favorable to their development and spread, has devolved upon these officers within the limits of their respective provinces. In a resolution by the Government in the Home Department, under date the 10th September 1868, the duties of the Sanitary Commissioners with the local Governments and Administrations have been fully detailed. Briefly stated, they are as follows :—

“(1). To ascertain the existing sanitary condition of the country under their charge, and suggest measures for its improvement.

“(2). To advise local Governments and Administrations in matters concerning the public health.

“(3). To collect information as to the unusual prevalence of any particular disease or diseases in any particular locality, to suggest measures for their removal, and to supervise measures for the prevention of venereal disease in the neighbourhood of Military Cantonments.

“(4). In case of any unusual visitation, to proceed to the spot, endeavor to trace its source, and aid in carrying out remedial measures.

“(5). To examine all localities in which cholera, fevers, and similar diseases are endemic or localized, and propose means for removing them.

“(6). To assist in organizing, as well as circumstances will allow, a proper system of registration of births and deaths, unless this duty be entrusted by the local Government to some other officer.

“(7). To prepare a medical topography of their respective provinces or presidencies.

“(8). To submit to local Governments and Administrations a carefully digested annual report of their proceedings, and in case of the outbreak of epidemic diseases, to forward early reports of all their proceedings.

“(9). To furnish the imperial Sanitary Commissioner with copies of their reports, and generally to keep him informed on all matters of sanitary importance.”

In all the provinces, the Sanitary Commissioners have been employed in matters connected with the duties thus indicated. Their annual reports have not yet reached me, and I am thus unable to attempt any general history of disease throughout the country during the past year, or to state what progress has been made in devising and carrying out those great measures of reform which are so much required. In first entering on such a wide and difficult field of investigation, and in recording their proceedings, delay is unavoidable, but I trust that in future I may be in possession of the main facts regarding each province on such a date as will enable me to connect them with the statistics of other sections of the community, and to prepare a concise history of the whole.

160. As a first step towards any real sanitary progress, accurate vital statistics of the people are indispensable, and it is very desirable that one uniform system should be adopted. **Vital statistics of general population.** This important question is now under the consideration of the Government. The nature of the proposals on this subject which have been made, and the grounds on which they are based, will be found detailed in the papers which are given in the appendix. Absence on special duty in the cantonments and camps which have been affected with cholera, with the labor involved in an enquiry into the circumstances attending the wide-spread epidemic of the current year, have delayed the correction of the proofs and the passage of this report through the press.

J. M. CUNINGHAM, M. D.,
Sanitary Commr. with the Govt. of India.

15th September 1869.

APPENDIX

REFERRED TO IN PARA. 160 OF THE REPORT.

*To the Secretary to the Government of India, Home Department,--No. 112, dated Calcutta,
28th February 1869.*

In accordance with the orders of the Government, conveyed in your letter No. 197, dated the 31st December 1868, I have the honor to submit a series of forms for collecting the vital statistics of the general population, and for showing the monthly and annual results. As it is very desirable that the information obtained from the different provinces on this very important subject should be tabulated on the same plan, I would recommend that these forms should be generally adopted throughout India.

2. As stated in this office letter No. 958, dated the 8th December 1868, the local Sanitary Commissioners were sometime ago requested to express their opinions on the general question of registration throughout their respective provinces, and particularly on the form of statements which they would recommend for adoption. Their replies will appear in the printed proceedings for the current month, where they can be conveniently referred to. Specimens of the forms recommended by them will not be given there *in extenso*, as they would occupy too much space, but the nature and object of each form proposed will be briefly stated. All the registration returns which have been received from the Sanitary Commissioners appear to be capable of improvement, and I have therefore prepared a totally new series. In this work much assistance has been derived from the suggestions of the local Sanitary Officers, and especially from the very careful statements which have been framed by the Sanitary Commissioners of the Punjab and the Central Provinces.

3. Before attempting to prepare any monthly or annual forms to show the results of registration, it is necessary to decide what particulars can be supplied by the persons who may have to perform the duties of registrars. Any one who is able to read and write can enter the mere fact and date of death; but as regards the cause, no very precise information can, in very many cases, be expected. There are certain diseases, however, with the general characters of which even the common people are well acquainted. Such are cholera, small-pox, fevers, and bowel complaints. But under such headings as brain disease, liver disease, heart disease, the causes of death registered must be inaccurate; and even as regards such causes as child-birth, chest affections, and measles, serious errors would be apt to arise. Again, such injuries, as suicide, wounding, accident, snake-bite, and killed by wild beasts, are understood by all. It is not, however, advisable to have such a heading as "criminal violence and poisoning," because at the time of death correct information on this head will not be available, and it may not be procurable for months afterwards, when the cause of death has been made the subject of judicial investigation. A return of persons "executed" is hardly needed.

4. As regards age again, the entries will often be incorrect. There is no point on which a native is more ignorant, or professes to be more ignorant, than age. The division of life into quinquennial periods, which is generally adopted in more civilized countries, is therefore unsuited for India, and it is very much to be feared that even the division into periods of 10

years may be too detailed. As Dr. DeRenzy remarks, however, the infantile mortality can be recorded with accuracy, and this will form a most important item of information. Under the 10-year periods, the data will probably be, for a time at least, very incorrect, but it appears advisable to adopt this form of division as the standard of accuracy to be aimed at.

5. In recording the caste of the person where death is registered, no minute classification should, at all events for some time to come, be attempted. A division into Christians, Mahomedans, Hindoos and all other classes, seems to be sufficient; but on this point the local peculiarities of the particular population should be studied. It is however manifestly of little use to enumerate the deaths of any class, the proportion of which in the general population has not been ascertained.

6. In naming Christians, it must not be understood that either Europeans or East Indians are to be included in the returns. The statements should all be reserved for natives of the country. The two classes named are to be found almost exclusively in civil stations and military cantonments, and should be entered in separate statements. The forms now recommended have no reference to either of these small sections of the community.

7. In many parts of the country, neither births nor marriages are yet registered, and the collection of any statistics with regard to either is attended with much greater practical difficulty than the registration of deaths; but registration of births and marriages has already been introduced into the Central Provinces and British Burmah, and a record merely of the number of each might be attempted in other local governments and administrations.

8. The accompanying form (A) of daily register of births, deaths and marriages has been prepared on these principles. It should be a nominal roll, written in from day to day as births, deaths and marriages are reported—a mark in the proper columns will indicate the class to which the deceased belonged, the cause of death, and the age at which the individual died. A space is also provided for entering the number of births and marriages registered daily.

9. The circumstances of the different provinces, and the agency by which vital statistics have hitherto been collected, vary so much, that it would be difficult to devise means for securing registration which shall be suitable for all. Nor is this a point on which any opinion has been called for. The local governments are best able to judge of the machinery which ought to be employed for the purpose, and also of the extent to which registration may successfully be carried out in their respective provinces. The importance of the work cannot be over-estimated. An accurate registration of deaths must form the basis of all sound sanitary reforms, and it is therefore to be hoped that in all the provinces earnest endeavors will be made to extend registration and to secure its being carried out with as great accuracy as possible.

10. Without entering into this question of the agency, by means of which it may best be conducted, there are certain general principles regarding the best manner of procedure, which are deserving of consideration, and which must be explained in order that the object of the accompanying forms may be fully understood.

11. The size of each registration circle is a matter of great practical importance. The opinion is generally expressed by the Sanitary Commissioners, that towns numbering 5,000 inhabitants and upwards should be separately shown, and in this opinion I fully concur. It is also very desirable that some general plan should be adopted as regards the extent of rural

circles. I do not now refer to the area to be embraced by each separate registrar, but to the area of country which is to form the unit of rural registration in the returns. Dr. DeRenzy proposes the pergunnah, and for the Punjab this will answer exceedingly well. The size of the pergunnahs, however, varies much in other provinces, and it seems impossible to name any particular division of country known, either for financial or judicial purposes, which shall be appropriate for all. It is sufficient to point out that returns for each district as a whole will not be sufficient, and that the results must also be shown according to smaller areas into which each should be divided for the purposes of registration. Districts are so large, and present such marked differences in the physical features of different parts, that the returns of each, given as a whole, are of comparatively little value. For sanitary purposes it is indispensable to know the relative mortality in small and, as far as possible, well-defined tracts; to ascertain the death-rate in each of these communities; to see how far this arises from preventable causes, and to apply the remedies. It is only in this way that we can hope to acquire accurate knowledge of the circumstances under which disease arises and to make vital statistics the stepping-stone to sanitary reforms.

12. One registration office will not be sufficient for a large town, and within each rural circle it will also generally be convenient to have two or three places at which reports of births, deaths, and marriages, may be made. At each of these, whether in town or country, a daily register should be kept in form A, which should be forwarded, in original, with the totals added, to the head registration office of the town or rural circle. Each of these will prepare a monthly return in form B, which should be forwarded to the registrar general (Sanitary Commissioner) of the province.

13. Having decided the registration stations in which deaths will be recorded, and the rural circles and towns from which monthly returns will be forwarded to the central office of the province, the next point to be determined is, what use is to be made of these returns? The result should be embodied first in monthly statements, and the statement for each month should be published in the local Gazette as soon as possible after the close of the month to which it refers. A form (C) of monthly statement is now submitted. Dr. Townsend proposes quarterly returns, but the delay is objectionable, and the introduction of this mode of procedure adds greatly to the labor. The monthly record is much more suited to this country, and its adoption in unison with the statistics of the troops and prisoners which are already furnished. Dr. DeRenzy, in addition to the monthly statement, desires a weekly statement from towns. The reasons given are no doubt excellent, and the measure might be adopted wherever the means exist of undertaking the extra labor entailed. No other statement should, however, interfere with the regular preparation and publication of the monthly return.

14. The monthly form herewith submitted requires little explanation, but there are one or two particulars which appear in it and the other forms which may now be conveniently considered. In nearly all the forms which have been suggested by the Sanitary Commissioners, the towns and rural tracts are entered in separate statements. It is very desirable that the registration of each town should be given by itself, but the value of the record is much increased, if the results are shown side by side with those of the rural tracts in the immediate vicinity of which it is situated. All towns and rural tracts and also military cantonments should therefore be entered geographically (not alphabetically) side by side in their respective districts. Under each district will appear the totals of that district, and at the foot of all, the totals for the province. But the practical object of the registration, it must be borne in mind, is not so much to deduce a death-rate for a district or a province, as to ascertain the places in which the deaths are most numerous in proportion to the population, and the causes to which the excess is due.

15. From the monthly returns the annual statements Nos. I to X can easily be prepared in the central office. These statements sufficiently explain themselves, but it may be well to state the definite aim which is proposed in each.

- No. I—Will show deaths according to locality.
- No. II—According to month.
- No. III—According to cause.
- No. IV—According to age.
- No. V—According to religion or class.
- No. VI—Will show the distribution of cholera throughout the province in the several months of the year.
- No. VII—Will afford the same information regarding small-pox.
- No. VIII—Regarding fevers.
- No. IX—Regarding bowel complaints.
- No. X—Is a comparative statement of births, deaths and marriages.

Other statements might have been devised with a view of further utilizing the data given in the original registers, but the above are amply sufficient to commence with, and, if they can be prepared with any degree of accuracy, the information they contain will prove of very great value.

16. There are one or two other points which require attention. As has been already stated military cantonments should be shown separately in the returns. From them monthly statements of mortality are now prepared and forwarded to this office, and in cantonments the work of registration, it may fairly be expected, will be carried out with more care, and therefore with more accurate results, than in other places. I propose that a general statement showing the results of registration in each cantonment shall be regularly printed in proceedings, and from these the local Sanitary Commissioners will be able to fill up the data required to make the returns for each district and province complete. In this manner the extra labor attendant on the preparation and despatch of duplicate cantonment registration returns will be avoided.

17. All the annual statements should be for the calendar, and not for the official year. The local governments and administrations generally adopt the former; it is undoubtedly the proper period for which vital statistics should be prepared, and it ought therefore to be universally adopted. By fixing the one standard, comparison can be easily made between the results of different provinces, and the whole will afford very valuable data in connection with the annual statistics of the troops and prisoners, which all embrace the twelve months from January to December.

18. In using the standard forms, no alterations, however slight, should be allowed. If there are any points regarding which it may be thought advisable to give further details, they should be embodied in separate returns.

19. As already stated, I do not propose in this report to discuss the agency through which registration may best be conducted in the different provinces. Whatever system may, however, be adopted, I would strongly recommend that the returns of the different towns and rural circles should be received first by the civil surgeon of the district, and by him forwarded to the central office. In several of the provinces the civil surgeons have been appointed health-officers of their respective districts, and the first step towards their being enabled to discharge these important duties is to make them acquainted with the mortality returns of the different portions

of the community. Civil surgeons are not provided with any office establishment, and without some assistance, it would be manifestly impossible for them to exercise any supervision over the returns. With the assistance of a clerk on a moderate salary, they would be relieved of much labor in the preparation of indents and returns, which they now have to perform themselves, and they would be able to devote more time to matters of greater importance, and also to act as registrars of their respective districts. I would recommend this suggestion to the favorable consideration of the Government.

MONTHLY

Daily Register of Births, Deaths, and Marriages at the Registration Station of _____ in the _____

1	2	3	4				5												
No.	Day of the month.	Name of person whose death is reported.	CLASS.				CAUSE OF												
			Christian.	Mahomedan.	Hindoo.	Other classes.	Cholera.		Small-pox.		Fever.		Bowel complaints.		Suicide.		Wounding.		
							M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
1																			
2																			
3																			
4																			
5																			
6																			
7																			
8																			
9																			
10																			
Totals for the Month ...							M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	

NOTE.—A form exactly the same will answer for each Registration Office in a town.
Those "born dead" should be registered under the head of "all other causes."

DEATH.										AGE AT TIME OF DEATH.										6		
SITES.				All other causes.		Total deaths of each day.											Number of Births registered each day.			Number of Marriages registered each day.	No.	
Accident.		Snake-bite or killed by wild beasts.																				
M.	F.	M.	F.	M.	F.	M.	F.	Total.									M.	F.	Total.			
																						1
																						2
																						3
																						4
																						5
																						6
																						7
																						8
																						9
																						10

MONTHLY

Births, Deaths, and Marriages registered in the Rural Circle of _____ in the

Population of Rural Circle ...

Christian.

Mahomedan.

1 No.	2 Name of Registration Station.	3 CLASS.				4 CAUSE OF DEATH											
		Christian.	Mahomedan.	Hindoo.	Other classes.	Cholera.		Small-pox.		Fever.		Bowel complaints.		Suicide.		Wounding.	
						M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
1																	
2																	
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	
Totals for the Month																	

NOTE.—This return can easily be prepared by taking the totals of the original registers and
A return in exactly the same form to be prepared for each town of and above 5,000 inhabitants,

MONTHLY

Deaths registered from different causes in the Rural Circles and Towns of the

1	2	3	4			5			6			7			8		
No.	DISTRICT.	Name of Rural Circle or Town.	Population according to Census of—			Cholera.			Small-pox.			Fever.			Bowel Complaints.		
			M.	F.	Total.	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.
1	ALLAHABAD.																
2																	
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	
		Total of District															
11	FUTTERPORE.																
12																	
13																	
14																	
15																	
16																	
17																	
18																	
19																	
20																	
		Total of District.															
21	CAWSTON.																
22																	
23																	
24																	
25																	
26																	
27																	
28																	
29																	
30																	
		Total of District.															
		Grand Total.															

NOTE.—Rural circles, towns and cantonments to be arranged geographically in their respective districts and not towns of and above 5,000 inhabitants should be shown separately in their proper geographical place, being each below.

Military Cantonments should also be shown separately in this return, and distinguished by the capital letter C. Among "all other causes" (column 19) those "born dead" should be included.

This monthly return for the province should be published in the local Government Gazette as soon as possible after

*Annual Form No. I.—Deaths registered in the different Rural Circles and Towns of the _____
Provinces during the Year _____*

1	2	3	4			5	6	7			8			9		
No.	DISTRICT.	Name of Rural Circle or Town.	Population according to census of —			Area in statute acres.	Average population per statute acre.	Number of Deaths registered.			Ratio of Deaths per 1,000 of the population.			Mean ratio of Deaths per 1,000 during previous 5 years.		
			M.	F.	Total.			M.	F.	Total.	M.	F.	Total.	M.	F.	Total.
1	ALLAHABAD.															
2																
3																
4																
5																
6																
7																
8																
9																
10																
		Total of District														
11	FUTTEHPORE.															
12																
13																
14																
15																
16																
17																
18																
19																
20																
		Total of District														

NOTE.—This Return is designed to show deaths according to locality. The different rural circles and towns should be entered in it as far as possible in their geographical order, and not alphabetically, the object in view being to compare the death rates in places similarly situated. The towns (that is, those having a population of or over 5,000 inhabitants) should be distinguished by having their names entered in red ink, or by having the letter T prominently entered after each. The statistics of these must be kept quite distinct from those of the rural circles. Villages and small towns, having a population of less than 5,000 inhabitants, should be included in the statistics of the rural circles to which they belong.

[illegible]

SUMMARY OF DEATHS IN THE _____ PROVINCES DURING THE YEAR 18_____

[illegible]

Annual Form No. II.—Deaths registered in the different Rural Circles and Towns

1	2	3	4			5														
No.	DISTRICT.	Name of Rural Circle or Town.	Population according to Census of 1881			January.			February.			March.			April.			May.		
			M.	F.	Total.	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.
1	ALLAHABAD.																			
2																				
3																				
4																				
5																				
6																				
7																				
8																				
9																				
10																				
		Total of District ...																		
11	PUTTIPORE.																			
12																				
13																				
14																				
15																				
16																				
17																				
18																				
19																				
20																				
		Total of District ...																		
21	CAWNPORE.																			
22																				
23																				
24																				
25																				
26																				
27																				
28																				
29																				
30																				
		Total of District ...																		
		TOTALS ...																		
			Ratio of deaths per 1,000 in each month...			M.	F.	Total.	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.

At the end of the Statement, after the totals for the whole province, the monthly columns should be prolonged with a small interspace as the return is to show the mortality according to months, the division into males and females being added only as a check on the Registers.

[illegible]

Annual Form No. III.—Deaths registered from different causes in the Rural Circles

1	2	3	4			5			6			7			8		
No.	District.	Name of Rural Circle or Town.	Population according to Census of 1881.			Cholera.			Small-pox.			Fevers.			Bowel Complaints.		
			M.	F.	Total.	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.
1	ALLAHABAD.																
2																	
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	
		Total of District ...															
11	FUTTEHPORE.																
12																	
13																	
14																	
15																	
16																	
17																	
18																	
19																	
20																	
		Total of District ...															
21	CAWNPORE.																
22																	
23																	
24																	
25																	
26																	
27																	
28																	
29																	
30																	
		Total of District ...															

NOTE.—Rural circles and towns to be arranged exactly as before. Among "all other

causes," column 10, those "born dead" should be included.

[illegible]

*Annual Form No. IV.—Deaths registered according to AGE in the Rural Circles
and Towns of the Provinces during the Year*

1	2	3	4																5					
No.	DISTRICT.	Name of Rural Circle or Town.	Born dead.		Under 1 year.		1 to 5.		6 to 15.		16 to 25.		26 to 35.		36 to 45.		46 to 60.		Over 60.		TOTAL.			
			M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	Total.	
1	ALLAHABAD.																							
2																								
3																								
4																								
5																								
6																								
7																								
8																								
9																								
10																								
		Total of District ...																						
11	FUTTEHPORE.																							
12																								
13																								
14																								
15																								
16																								
17																								
18																								
19																								
20																								
		Total of District ...																						
21	CAWNPORE.																							
22																								
23																								
24																								
25																								
26																								
27																								
28																								
29																								
30																								
		Total of District ...																						

NOTE.—Rural circles and towns to appear in this and all other forms as before.

Annual Form No. V.—Deaths registered according to CLASSES in the Rural Circles and Towns of the _____ Provinces during the Year _____

1 No.	2 DISTRICT.	3 Name of Rural Circle or Town.	4 Population according to Census of					5 NUMBER OF DEATHS REGISTERED.					6 RATIO OF DEATHS PER 1,000 OF POPULATION.				
								Christians.	Mahomedans.	Hindoo.	Other Classes.	Total.	Christians.	Mahomedans.	Hindoo.	Other Classes.	Total.
			C.	M.	H.	O.	Total.										
1	ALLAHABAD.																
2																	
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10		Total of District...															
11	FUTTEHPORE.																
12																	
13																	
14																	
15																	
16																	
17																	
18																	
19																	
20		Total of District...															
21	CAWNPORE.																
22																	
23																	
24																	
25																	
26																	
27																	
28																	
29																	
30		Total of District...															

NOTE.—This is a classification which is simple and adapted to all parts of the country. If a more minute division is desired, it can be followed always, provided that the population of each respective class which is entered is known. Without this information, any particulars of deaths are of little value. Europeans and East Indians should not be entered either here or in any of the other tables.

Annual Form No. VI.—Deaths registered from CHOLERA in the Rural Circles and Towns

1	2	3	4															
No.	DISTRICT.	Name of Rural Circle or Town.	Population according to Census of	January.			February.			March.			April.			May.		
			M. F. Total.	M. F. Total.	M. F. Total.	M. F. Total.	M. F. Total.	M. F. Total.	M. F. Total.	M. F. Total.	M. F. Total.	M. F. Total.	M. F. Total.	M. F. Total.				
1	ALLAHABAD.																	
2																		
3																		
4																		
5																		
6																		
7																		
8																		
9																		
10																		
		Total of District ...																
11	FUTTEHPORE.																	
12																		
13																		
14																		
15																		
16																		
17																		
18																		
19																		
20																		
		Total of District ...																
21	CAWNPORE.																	
22																		
23																		
24																		
25																		
26																		
27																		
28																		
29																		
30																		
		Total of District ...																

NOTE.—The names of all the rural circles and towns should be entered in this form, and not

Annual Form No. VII.—Deaths registered from **SMALL-POX** in the Rural Circles and Town

1	2	3	4																				
No.	District.	Name of Rural Circle or Town.	Population according to Census of	January.	February.	March.	April.	May.															
			M. F. Total.	M. F. Total.	M. F. Total.	M. F. Total.	M. F. Total.	M. F. Total.	M. F. Total.	M. F. Total.	M. F. Total.	M. F. Total.	M. F. Total.	M. F. Total.	M. F. Total.	M. F. Total.							
1	ALLAHABAD.																						
2																							
3																							
4																							
5																							
6																							
7																							
8																							
9																							
10																							
		Total of District ...																					
11	FUTTEHPORE.																						
12																							
13																							
14																							
15																							
16																							
17																							
18																							
19																							
20																							
		Total of District ...																					
21	CAWNPORE.																						
22																							
23																							
24																							
25																							
26																							
27																							
28																							
29																							
30																							
		Total of District ...																					

Vide Note on Form VI.

[illegible]

Annual Form No. VIII.—Deaths registered from *FEVERS* in the Rural Circles and Towns.

1	2	3	4	5													
No.	District.	Name of Rural Circle or Town.	Population according to Census of	January.	February.	March.	April.	May.									
			M. F. Total.	M. F. Total.	M. F. Total.	M. F. Total.	M. F. Total.	M. F. Total.	M. F. Total.	M. F. Total.	M. F. Total.	M. F. Total.	M. F. Total.	M. F. Total.	M. F. Total.	M. F. Total.	
1	ALLAHABAD.																
2																	
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	
		Total of District ...															
11	FUTTEHPORE.																
12																	
13																	
14																	
15																	
16																	
17																	
18																	
19																	
20																	
		Total of District ...															
21	CAWNPORE.																
22																	
23																	
24																	
25																	
26																	
27																	
28																	
29																	
30																	
		Total of District ...															

Vide Note on Form VI.

Annual Form No. IX.—Deaths registered from BOWEL COMPLAINTS in the Rural Circles

1	2	3	4	5																
No.	District.	Name of Rural Circle or Town.	Population according to Census of			January.			February.			March.			April.			May.		
			M.	F.	Total.	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.			
1	ALLAHABAD.																			
2																				
3																				
4																				
5																				
6																				
7																				
8																				
9																				
10																				
		Total of District ...																		
11	FUTTEHPORE.																			
12																				
13																				
14																				
15																				
16																				
17																				
18																				
19																				
20																				
		Total of District ...																		
21	CAWNPORE.																			
22																				
23																				
24																				
25																				
26																				
27																				
28																				
29																				
30																				
		Total of District ...																		

Vide Note on Form VI.

Annual Form No. X.—Comparative Statement of Births, Deaths, and Marriages registered in the Rural Circles and Towns of the _____ Provinces during the Year 18____

[illegible]

ANNUAL RETURNS

OF THE

EUROPEAN AND NATIVE ARMIES

AND OF THE

JAIL POPULATION OF THE BENGAL PRESIDENCY,

FOR THE YEAR 1868.

COMPILED AND SYSTEMATICALLY ARRANGED FROM THE ORIGINAL DOCUMENTS BY

JAMES L. BRYDEN, M.D.,

SURGEON, BENGAL MEDICAL SERVICE;

STATISTICAL OFFICER ATTACHED TO THE SANITARY COMMISSIONER WITH THE GOVERNMENT OF INDIA.

1868.

- 1.—EUROPEAN TROOPS Tables I—XXI.
- 2.—NATIVE ARMY „ I—XIV.
- 3.—JAIL POPULATION „ I—XII.
- 4.—DETAIL of the ADMISSIONS and DEATHS of the EUROPEAN
and NATIVE ARMIES, and of the JAIL POPULATION.

EUROPEAN TROOPS, 1868.

EUROPEAN TROOPS, 1868.

I.

TABLE showing the SICKNESS and MORTALITY among the EUROPEAN TROOPS serving in the BENGAL PRESIDENCY during the Year 1868, and the prevalence of the principal Diseases in each Month of the Year.

MONTHS.						CAUSES OF DEATHS IN HOSPITAL.																			Died out of Hospital.			
	Average Strength.	Average Number Daily Sick.	Number Daily Sick per cent. of Strength.	Number of Deaths.	Died per 1,000 of Strength.	Cholera.	Smallpox.	Fever, Intermittent.	Fever, Remittent.	Fever, Continued.	Apoplexy.	Delirium Tremens.	Dysentery, Acute.	Dysentery, Chronic.	Diarrhoea.	Hepatitis, Acute.	Hepatitis, Chronic.	Spleen Disease.	Respiratory Diseases.	Heart Diseases.	Phthisis Pulmonalis.	Dropsy.	Scurvy.	Atrophy and Anæmia.		Wounds and Accidents.	All other Causes.	
January ...	26,634	1,327	4.98	39	1	1	1	4	...	7	3	...	4	3	5	1	...	9	4
February ...	29,178	1,338	4.57	25	...	1	...	1	3	1	...	...	...	...	1	...	4	4	...	1	3	4	...	...	...	1	1
March ...	29,849	1,390	4.63	37	...	4	...	1	1	1	...	...	...	...	1	...	3	3	...	...	3	3	...	...	...	...	3
April ...	32,480	1,571	4.84	35	...	6	...	1	...	1	...	...	...	...	...	...	3	3	...	...	3	3	...	...	...	...	4
May ...	32,646	1,722	5.28	53	...	10	...	1	3	1	...	...	...	...	...	...	4	3	...	...	4	3	...	...	...	...	4
June ...	32,609	1,899	5.73	115	...	13	...	1	4	17	...	...	...	...	...	...	3	3	...	...	3	3	...	...	...	...	3
July ...	32,942	1,895	5.76	57	...	6	...	1	4	4	...	...	...	...	...	...	1	3	...	...	3	3	...	...	...	...	3
August ...	33,121	1,936	5.84	79	...	6	...	1	3	11	...	...	...	...	...	...	1	1	...	...	3	3	...	...	...	...	3
September ...	32,997	1,978	5.99	74	...	4	...	...	8	4	...	...	...	...	...	...	3	4	...	...	3	3	...	...	...	...	...
October ...	32,553	1,884	5.80	41	...	3	...	...	5	4	...	...	...	...	...	...	1	1	...	...	3	3	...	...	...	...	...
November ...	32,231	1,608	4.99	43	...	3	...	1	1	3	...	...	...	...	...	...	4	3	...	...	5	6	...	...	...	...	...
December ...	32,495	1,366	4.20	37	...	3	...	1	1	1	...	...	...	...	...	...	2	4	...	4	7	3	1	...	...	...	6
						57	...	7	31	53	98	13	31	17	6	53	56	...	25	43	49	1	...	3	5	53	46	
Died per 1,000 of the Average Strength.																												
the year...	31,590	1,656	5.25	635	20.11	1.81	...	2.98	2.78	.38	1.52	.19	3.42	...	.79	1.36	1.35	.03	...	.10	.16	1.98	1.66	...	...	...

CAUSES OF ADMISSIONS.	NUMBER OF ADMISSIONS INTO HOSPITAL IN EACH MONTH.												Total Admissions during the Year.	Admitted per cent. of Strength.	Died per cent. of Admissions.
	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.			
			
Cholera ...	...	1	6	10	10	20	8	16	5	3	4	4	87	.27	65.83
Smallpox ...	...	3	4	...	...	...	...	...	...	...	...	6	14	.04	...
Fever, Intermittent ...	634	874	453	536	796	1,114	994	928	1,184	1,095	1,106	945	10,139	32.09	...
Fever, Remittent ...	33	39	55	67	100	184	68	163	245	115	83	67	1,219	3.83	...
Fever, Continued ...	25	28	75	154	457	911	454	440	293	379	84	46	3,248	10.15	1.68
Apoplexy ...	1	3	1	3	5	61	39	114	13	2	...	1	241	.76	35.69
Delirium Tremens ...	10	9	6	13	15	10	12	16	14	11	12	12	140	.44	6.57
Dysentery ...	50	45	95	96	84	114	93	103	138	105	86	105	1,103	3.49	4.35
Diarrhoea ...	89	82	341	374	263	261	176	306	299	173	163	476	2,496	7.82	.24
Hepatitis ...	93	101	116	134	144	156	170	153	194	122	94	104	1,611	5.10	6.70
Spleen Disease ...	9	6	18	13	15	16	19	18	16	14	9	6	156	.50	...
Respiratory Diseases ...	177	180	212	202	222	208	164	147	147	172	186	241	2,239	7.09	1.12
Phthisis Pulmonalis ...	20	16	21	25	22	30	23	29	52	40	18	24	319	1.01	15.36
Dropsy ...	3	3	1	4	2	6	...	...	1	1	2	3	25	.08	...
Scurvy ...	183	168	201	190	173	194	176	180	220	146	161	161	2,153	6.83	...
Heart Diseases ...	590	558	770	581	510	533	426	406	509	456	396	425	6,233	19.73	...
Other Diseases ...	38	43	75	84	83	121	50	75	98	66	66	56	856	2.72	...
Wounds and Ulcers ...	253	181	316	284	287	360	322	308	263	215	206	255	3,242	10.29	...
Wounds and Accidents ...	277	229	358	278	233	300	183	318	311	235	263	387	3,271	10.36	...
Other Causes ...	398	387	430	508	634	636	653	650	787	505	345	377	6,463	20.46	...
	2,964	2,404	3,454	3,544	4,945	5,484	4,019	4,270	4,899	3,693	3,299	3,499	45,394		
Admitted per cent. of the Average Strength in each Month.															
	10.76	8.53	11.57	10.92	12.39	16.82	12.20	12.89	14.73	11.26	10.20	10.77	145.63		

EUROPEAN TROOPS, 1868.

II.

TABLE showing the SICKNESS and MORTALITY among the EUROPEAN TROOPS serving in BENGAL PROPER during the Year 1868, and the prevalence of the principal Diseases in each Month of the Year.

MONTHS.	Average Strength.	Average Number Daily Sick.	Number Daily Sick per cent. of Strength.	Number of Deaths.	Died per 1,000 of Strength.	CAUSES OF DEATHS IN HOSPITAL.																			Died out of Hospital.		
						Cholera.	Smallpox.	Fever, Intermittent.	Fever, Remittent.	Fever, Continued.	Apoplexy.	Delirium Tremens.	Dysentery, Acute.	Dysentery, Chronic.	Diarrhoea.	Hepatitis, Acute.	Hepatitis, Chronic.	Spleen Disease.	Respiratory Diseases.	Heart Diseases.	Pneumonia.	Dropsy.	Scurvy.	Atrophy and Anæmia.		Wounds and Accidents.	All other Causes.
January ...	1,391	74	5.33	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1
February ...	1,919	118	6.04	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
March ...	1,639	118	6.94	10	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
April ...	1,764	96	5.44	4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
May ...	1,790	102	5.70	4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
June ...	1,862	110	5.91	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
July ...	2,325	139	5.94	4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
August ...	2,611	178	6.82	6	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
September ...	2,906	224	7.69	10	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
October ...	2,552	270	10.58	7	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
November ...	2,452	212	8.65	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
December ...	1,734	109	6.28	4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
						11	...	1	4	4	2	1	8	4	...	6	5	...	1	...	1	...	...	...	...	6	5
Died per 1,000 of the Average Strength.																											
For the year...	2,069	146	7.09	59	28.66	5.34	...	4.37	...	...	...	...	5.83	...	...	5.34	...	...	...	...	...	...	...	...	...	...	...

CAUSES OF ADMISSIONS.	NUMBER OF ADMISSIONS INTO HOSPITAL IN EACH MONTH.												Total Admissions during the Year.	Admitted per cent. of Strength.	Died per cent. of Admissions.
	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.			
Cholera ...	...	...	3	1	2	2	5	...	...	...	1	1	15	73	73.33
Smallpox ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Fever, Intermittent ...	7	11	6	12	14	21	29	75	107	162	166	78	667	32.39	...
" Remittent ...	...	1	...	...	...	...	...	15	99	46	22	1	184	...	...
" Continued ...	1	10	18	23	28	49	31	35	67	55	14	6	326	24.77	1.87
Apoplexy ...	...	...	1	1	1	2	...	...	...	...	...	...	5	24	40.00
Delirium Tremens ...	1	2	1	3	1	...	1	...	6	3	2	6	29	1.41	8.45
Dysentery ...	10	19	33	11	8	16	25	30	21	17	25	18	233	11.32	5.15
Diarrhoea ...	8	20	19	10	17	21	20	27	25	11	11	8	197	9.57	...
Hepatitis ...	3	9	9	10	8	13	13	19	13	19	7	11	134	6.51	6.21
Spleen Disease ...	...	...	1	...	...	...	...	...	...	1	...	...	3	15	...
Respiratory Diseases ...	16	27	13	...	4	11	11	7	...	4	11	8	136	6.60	7.74
Phthisis Pulmonalis ...	1	2	...	...	...	1	...	...	1	...	...	...	10	48	10.00
Scurvy ...	1	2	...	...	...	...	...	...	...	...	...	...	4	20	...
Rheumatism ...	12	7	8	5	8	4	5	5	5	8	5	3	75	3.64	...
Veneral Diseases ...	43	66	79	38	36	56	44	41	80	74	41	36	633	30.74	...
Eye Diseases ...	1	4	5	3	2	4	2	4	1	1	...	1	28	1.36	...
Abscess and Ulcer ...	24	19	24	20	17	32	31	31	33	29	12	7	279	13.55	...
Wounds and Accidents ...	12	13	22	11	10	19	17	18	32	10	19	29	211	10.25	...
All other Causes ...	16	16	40	30	47	53	45	39	64	51	27	22	460	21.85	...
	155	228	282	188	203	303	278	350	548	492	350	242	3,619		
Admitted per cent. of the Average Strength in each Month.															
	11.14	11.88	16.60	10.66	11.34	16.27	11.96	13.40	21.08	19.28	14.27	13.95	175.76		

EUROPEAN TROOPS, 1868.

III.

TABLE showing the SICKNESS and MORTALITY among the EUROPEAN TROOPS serving in the DINAPORE, BENARES, OUDE and CAWNPORE DISTRICTS during the Year 1868, and the prevalence of the principal Diseases in each Month of the Year.

MONTHS.	Average Strength.	Average Number Daily Sick.	Number Daily Sick per cent. of Strength.	Number of Deaths.	Died per 1,000 of Strength.	CAUSES OF DEATHS IN HOSPITAL.																	Died out of Hospital.				
						Cholera.	Smallpox.	Fever, Intermittent.	Fever, Remittent.	Fever, Continued.	Apoplexy.	Delirium Tremens.	Dysentery, Acute.	Dysentery, Chronic.	Diarrhoea.	Hepatitis, Acute.	Hepatitis, Chronic.	Spleen Disease.	Respiratory Diseases.	Heart Diseases.	Phthisis Pulmonalis.	Dropsy.		Scurvy.	Atrophy and Anemia.	Wounds and Accidents.	All other Causes.
January ...	5,878	314	5.34	3	...	...	...	...	...	...	...	...	1	...	...	2	1	...	...	...	...	...	...	...	...	...	1
February ...	5,955	302	5.07	7	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
March ...	6,781	308	5.40	6	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
April ...	7,924	407	5.14	8	...	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2
May ...	8,050	433	5.38	8	...	...	...	1	...	...	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1
June ...	8,016	446	5.58	43	...	...	...	...	4	15	2	...	4	...	...	...	...	...	...	...	...	...	...	...	...	...	2
July ...	7,942	457	5.75	15	...	...	...	1	1	6	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1
August ...	7,805	461	5.93	22	...	5	...	...	3	3	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	2
September ...	7,848	468	5.96	18	...	4	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2
October ...	7,683	444	5.78	4	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
November ...	7,663	372	4.85	11	...	...	1	1	1	...	...	...	2	...	...	1	...	...	...	...	...	...	...	...	...	...	1
December ...	7,615	318	4.18	11	...	1	...	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	2
						11	...	2	4	9	28	2	10	...	5	13	7	...	8	17	11	1	...	1	1	12	14
Died per 1,000 of the Average Strength.																											
For the year...	7,439	399	5.36	150	20.97	1.48	...	2.02	3.76	.27	1.35	.07	2.69	...	1.09	2.29	1.48	.13	...	.13	.13	1.61	1.86				

CAUSES OF ADMISSIONS.	NUMBER OF ADMISSIONS INTO HOSPITAL IN EACH MONTH.												Total Admissions during the Year.	Admitted per cent. of Strength.	Died per cent. of Admissions.
	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.			
Cholera ...	...	...	...	1	...	1	...	11	4	...	...	1	18	24	61.11
Smallpox ...	...	...	...	...	...	...	...	...	...	...	...	...	2	.02	...
Fever, Intermittent ...	34	54	60	72	109	204	307	147	175	101	69	42	1,284	17.26	...
" Remittent ...	8	5	11	9	1	10	17	31	49	27	24	24	216	6.86	2.55
" Continued ...	2	3	11	31	35	65	63	38	26	10	12	8	294	...	...
Apoplexy ...	...	...	...	1	2	23	14	2	3	...	...	...	45	.61	60.00
Delirium Tremens ...	3	1	3	6	4	6	1	5	1	...	1	3	34	.46	5.84
Dysentery ...	17	6	22	29	25	28	19	22	34	25	12	30	289	3.80	3.73
Diarrhoea ...	34	17	34	51	57	52	37	71	52	37	30	41	517	6.95	.97
Hepatitis ...	18	21	28	28	31	45	34	43	49	24	18	28	365	4.91	5.48
Spleen Disease ...	2	1	...	2	3	4	6	4	4	4	2	...	32	.43	...
Respiratory Diseases ...	29	23	43	34	31	46	45	37	29	38	34	39	428	5.76	1.97
Phthisis Pulmonalis ...	1	4	3	4	7	8	1	6	11	9	7	5	66	.89	16.67
Scurvy ...	...	...	...	1	1	...	...	...	...	...	...	...	2	.02	...
Rheumatism ...	35	24	53	54	51	49	45	50	78	47	36	44	560	7.65	...
Veneral Diseases ...	208	144	244	177	137	150	131	143	141	150	114	152	1,880	25.41	...
Eye Diseases ...	14	9	21	22	19	25	16	17	27	16	13	15	214	2.88	...
Abscess and Ulcer ...	68	37	78	63	83	92	77	85	99	64	52	58	850	11.43	...
Wounds and Accidents ...	70	57	95	52	60	93	51	68	81	71	69	89	896	11.64	...
All other Causes ...	102	98	173	167	152	229	193	167	231	148	91	96	1,847	24.83	...
	641	512	904	803	808	1,130	946	945	1,094	763	674	685	9,807		
Admitted per cent. of the Average Strength in each Month.															
	10.91	8.80	13.33	10.13	10.04	14.10	11.91	11.95	13.94	9.96	7.49	9.00	131.85		

EUROPEAN TROOPS, 1868.

IV.

TABLE showing the SICKNESS and MORTALITY among the EUROPEAN TROOPS serving in the MEERUT and ROHILCUND DISTRICTS during the Year 1868, and the prevalence of the principal Diseases in each Month of the Year.

MONTHS.	Average Strength.	Average Number Daily Sick.	Number Daily Sick per cent. of Strength.	Number of Deaths.	Died per 1,000 of Strength.	CAUSES OF DEATHS IN HOSPITAL.																	Died out of Hospital.					
						Cholera.	Smallpox.	Fever, Intermittent.	Fever, Remittent.	Fever, Continued.	Apoplexy.	Delirium Tremens.	Dysentery, Acute.	Dysentery, Chronic.	Diarrhea.	Hepatitis, Acute.	Hepatitis, Chronic.	Spleen Disease.	Respiratory Diseases.	Heart Diseases.	Phthisis Pulmonalis.	Dropsy.		Scurvy.	Atrophy and Anæmia.	Wounds and Accidents.	All other Causes.	
January	3,270	184	5.01	6	...	...	...	...	...	1	...	...	...	...	...	2	...	...	1	...	...	...	...	...	...	...	1
February	3,124	146	4.64	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
March	4,003	182	4.54	4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
April	4,909	234	5.78	4	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
May	4,997	321	6.42	5	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
June	4,948	306	6.13	10	...	...	...	...	1	2	2	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...
July	4,973	332	6.68	10	...	...	...	...	...	...	2	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...
August	4,972	337	6.78	12	...	...	...	...	...	3	2	...	...	...	...	...	4	...	...	...	...	...	...	...	...	...	...
September	4,973	335	6.74	11	...	...	...	...	3	1	1	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...
October	4,907	300	6.11	6	...	...	...	...	1	...	...	...	...	...	...	...	5	...	...	...	...	...	...	...	...	...	...
November	4,668	253	5.42	7	...	...	...	...	...	1	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...
December	5,186	252	4.86	6	...	...	...	...	...	...	...	...	...	...	...	...	1	2	...	...	...	...	...	...	...	...	...
						6	9	11	1	2	1	...	18	15	...	2	6	6	2	6
Died per 1,000 of the Average Strength.																												
For the year...	4,582	268	5.85	85	19.55	...	...	3.27	2.49	.32	.66	...	7.20*	...	.44	1.31	1.31	...	...	...	...	...	...	...	.43	1.31	

CAUSES OF ADMISSIONS.	NUMBER OF ADMISSIONS INTO HOSPITAL IN EACH MONTH.												Total Admissions during the Year.	Admitted per cent. of Strength.	Died per cent. of Admissions.
	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.			
Cholera ...	...	...	...	1	...	...	...	1	...	...	...	...	2	.05	...
Smallpox ...	...	...	...	...	...	...	...	...	...	...	...	1	1	.02	...
Fever, Intermittent ...	55	25	36	40	67	118	103	103	110	71	86	118	632	20.34	...
" Remittent ...	2	1	22	46	63	60	17	24	21	4	1	6	271	...	...
" Continued ...	6	1	7	13	18	26	64	43	39	23	23	15	274	11.80	2.76
Apoplexy ...	...	...	...	...	1	8	12	5	1	...	...	...	27	.59	40.74
Delirium Tremens ...	...	2	1	1	4	...	4	...	...	2	...	1	18	.40	5.50
Dysentery ...	4	2	10	20	17	13	9	16	15	10	10	19	145	3.17	2.07
Diarrhea ...	3	7	23	54	21	25	24	25	48	18	20	21	269	6.31	...
Hepatitis ...	7	10	22	27	40	54	52	32	43	27	18	21	353	7.70*	9.35
Spleen Disease ...	...	...	1	2	6	2	1	3	3	4	...	...	22	.46	...
Respiratory Diseases ...	19	20	31	42	40	22	14	29	30	25	26	45	343	7.49	.54
Phthisis Pulmonalis ...	...	2	2	10	4	5	5	6	9	3	3	1	60	1.09	12.00
Scurvy ...	...	...	...	...	...	...	...	...	1	...	...	...	1	.02	...
Rheumatism ...	25	36	29	20	14	37	27	20	23	25	26	31	317	6.92	...
Venereal Diseases ...	71	52	96	107	86	72	49	46	67	51	58	99	654	14.64	...
Eye Diseases ...	5	5	11	16	13	21	6	9	11	9	6	3	115	2.51	...
Abscess and Ulcer ...	24	16	52	44	44	60	47	39	32	24	27	32	449	9.90	...
Wounds and Accidents ...	36	23	38	36	27	31	12	34	50	30	30	43	394	8.60	...
All other Causes ...	30	34	61	84	79	111	84	91	104	73	40	41	632	14.16	...
	289	239	442	597	549	665	524	531	607	403	377	497	5,680		
Admitted per cent. of the Average Strength in each Month.															
	6.84	7.55	11.03	11.55	10.97	13.33	10.54	10.74	12.21	8.21	8.06	9.57	124.16		

* This provincial ratio is unduly influenced by the admissions from Hepatitis in the Nynee Tal Convalescent Depot. One hundred and seventeen admissions and seven deaths from Hepatitis appear in the returns of this Depot for the season.

EUROPEAN TROOPS, 1868.

V.

TABLE showing the SICKNESS and MORTALITY among the EUROPEAN TROOPS serving in the AGRA DISTRICT and in CENTRAL INDIA during the Year 1868, and the prevalence of the principal Diseases in each Month of the Year.

MONTHS.						CAUSES OF DEATHS IN HOSPITAL.																	Died out of Hospital.					
	Average Strength.	Average Number Daily Sick.	Number Daily Sick per cent. of Strength.	Number of Deaths.	Died per 1,000 of Strength.	Cholera.	Smallpox.	Fever, Intermittent.	Fever, Remittent.	Fever, Continued.	Apoplexy.	Delirium Tremens.	Dysentery, Acute.	Dysentery, Chronic.	Diarrhoea.	Hepatitis, Acute.	Hepatitis, Chronic.	Spleen Disease.	Respiratory Diseases.	Heart Diseases.	Phthisis Pulmonalis.	Dropsy.		Scurvy.	Atrophy and Anæmia.	Wounds and Accidents.	All other Causes.	
January ...	4,039	217	5.37	5	1	1	2	1	...
February ...	4,154	213	5.13	2	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...
March ...	4,257	194	4.56	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...
April ...	4,223	207	4.90	3	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1	...	...	...	...	1	...
May ...	4,227	229	5.42	7	...	3	...	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...
June ...	4,211	236	5.60	20	...	7	...	1	...	...	6	...	...	...	...	1	1	...	...	1	1	...	...	1	...	1	1
July ...	4,191	268	6.40	7	...	2	...	...	...	...	1	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	2
August ...	4,187	257	6.14	5	...	1	...	1	...	...	...	1	...	...	...	...	...	...	...	...	1	...	...	...	...	1	2
September ...	4,184	247	5.90	11	...	...	...	2	...	...	3	1	...	...	...	1	1	...	1	...	3	...	...	...	...	...	...
October ...	4,068	220	5.41	8	...	1	...	...	...	...	...	...	1	...	...	1	2	...	...	1	...	...	...	...	2	...	...
November ...	3,936	206	5.23	4	...	...	...	...	...	...	...	...	...	...	...	1	1	...	...	1	1	...	...	...	...	1	...
December ...	4,369	193	4.42	3	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1
						14	...	1	4	...	10	1	...	2	...	6	9	...	2	4	9	...	...	1	2	7	4
Died per 1,000 of the Average Strength.																												
For the year...	4,170	224	5.37	70	18.22	3.36	...	1.20	2.40	2.1	4.8	...	3.60	...	4.8	9.5	2.10	...	2.4	4.8	1.68	...	...	1.68	...	9.5	...

CAUSES OF ADMISSIONS.	NUMBER OF ADMISSIONS INTO HOSPITAL IN EACH MONTH.												Total Admissions during the Year.	Admitted per cent. of Strength.	Died per cent. of Admissions.
	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.			
Cholera ...	...	...	...	...	3	10	3	4	1	2	...	1	24	58	58.33
Smallpox ...	...	...	3	...	...	...	...	...	...	...	...	5	8	19	...
Fever, Intermittent ...	170	103	76	107	115	206	225	188	228	189	162	138	1,907	45.73	...
" Remittent ...	6	4	9	2	6	18	9	10	24	6	8	4	106	7.65	1.25
" Continued ...	5	7	20	25	46	47	27	13	18	5	...	...	213	...	...
Apoplexy ...	...	...	1	2	...	6	4	2	4	1	...	1	18	43	55.58
Delirium Tremens ...	3	2	1	2	1	1	2	2	3	1	...	1	20	48	5.00
Dysentery ...	6	3	6	8	3	7	4	8	12	7	2	14	80	1.92	2.80
Diarrhoea ...	11	8	16	18	10	39	21	44	34	10	13	13	241	5.78	...
Hepatitis ...	22	24	23	15	23	19	22	14	20	21	17	18	238	5.71	6.30
Spleen Disease ...	3	3	4	...	2	2	2	...	1	2	4	1	24	58	...
Respiratory Diseases ...	37	17	19	20	23	16	14	18	20	19	25	38	266	6.38	7.5
Phthisis Pulmonalis ...	4	...	6	5	3	10	9	6	7	6	3	6	68	1.63	13.24
Scurvy ...	...	...	1	...	...	...	...	...	...	...	...	...	1	0.2	...
Rheumatism ...	23	18	26	15	26	21	23	30	33	12	17	19	263	6.31	...
Venereal Diseases ...	72	81	89	61	63	70	60	43	41	39	36	77	732	17.56	...
Eye Diseases ...	4	7	7	12	10	17	5	17	24	11	6	7	127	3.04	...
Abscess and Ulcer ...	42	20	39	30	38	44	49	33	46	31	23	41	449	10.78	...
Wounds and Accidents ...	52	27	51	43	39	39	34	23	39	34	43	71	495	11.87	...
All other Causes ...	60	47	60	42	47	65	69	78	95	64	43	51	721	17.29	...
	520	390	456	405	458	641	582	533	654	463	403	506	6,001		
Admitted per cent. of the Average Strength in each Month.															
	12.87	9.15	10.71	9.80	10.83	15.22	13.89	12.73	15.63	11.38	10.24	11.58	143.91		

EUROPEAN TROOPS, 1868.

VI.

TABLE showing the SICKNESS and MORTALITY among the EUROPEAN TROOPS serving in the PUNJAB during the Year 1868, and the prevalence of the principal Diseases in each Month of the Year.

MONTHS.	Average Strength.	Average Number Daily Sick.	Number Daily Sick per cent. of Strength.	Number of Deaths.	Died per 1,000 of Strength.	CAUSES OF DEATHS IN HOSPITAL.																	Died out of Hospital.				
						Cholera.	Smallpox.	Fever, Intermittent.	Fever, Remittent.	Fever, Continued.	Apoplexy.	Delirium Tremens.	Dysentery, Acute.	Dysentery, Chronic.	Diarrhoea.	Hepatitis, Acute.	Hepatitis, Chronic.	Spleen Disease.	Respiratory Diseases.	Heart Diseases.	Phthisis Pulmonalis.	Dropsy.		Scurvy.	Atrophy and Anæmia.	Wounds and Accidents.	All other Causes.
January ...	10,728	449	4.19	8	...	...	...	...	...	1	...	...	...	1	...	1	1	...	...	...	1	...	...	...	1	...	...
February ...	11,624	470	4.04	9	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
March ...	11,168	441	3.95	13	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
April ...	13,068	513	3.93	7	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
May ...	13,297	601	4.53	23	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
June ...	13,257	731	5.51	34	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
July ...	13,332	675	5.10	20	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
August ...	13,179	673	5.11	34	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
September ...	13,122	677	5.16	21	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
October ...	13,063	634	4.85	13	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
November ...	12,874	541	4.20	9	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
December ...	12,309	458	3.72	7	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
						...	...	3	10	29	35	7	11	5	1	7	16	...	10	12	13	...	...	1	9	20	15
Died per 1,000 of the Average Strength.																											
For the year...	12,576	572	4.55	197	15.67	...	...	3.34	...	2.79	.56	1.27	.08	1.83	...	.80	.95	1.03	...	...	.08	.16	1.59	1.19	...	...	...

CAUSES OF ADMISSIONS.	NUMBER OF ADMISSIONS INTO HOSPITAL IN EACH MONTH.												Total Admissions during the Year.	Admitted per cent. of Strength.	Died per cent. of Admis- sions.	
	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.				
Cholera ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Smallpox ...	1	1	...	...	...	...	...	...	...	...	...	...	2	...	.02	...
Fever, Intermittent ...	341	176	232	297	477	565	421	415	564	581	635	559	5,263	41.95	...	.06
" Remittent ...	15	9	4	9	30	96	25	79	52	32	28	31	410	...	...	...
" Continued ...	8	7	14	61	427	686	277	301	147	80	31	15	2,064	19.67	...	1.58
Apoplexy ...	1	...	...	...	1	22	9	105	5	1	...	...	144	1.15	...	24.31
Delirium Tremens ...	2	2	...	1	4	3	4	6	4	5	4	1	36	...	.29	19.46
Dysentery ...	10	9	14	27	31	50	36	26	46	44	33	17	343	2.73	...	4.67
Diarrhoea ...	24	26	35	121	133	93	61	125	119	95	76	66	964	7.90	...	.10
Hepatitis ...	27	25	26	40	41	64	46	45	69	30	32	14	465	3.70	...	4.95
Spleen Disease ...	4	2	10	8	4	7	10	10	8	3	3	3	72	...	.57	...
Respiratory Diseases ...	66	70	94	88	110	104	73	50	63	75	90	94	979	7.78	...	1.02
Phthisis Pulmonalis ...	3	2	8	4	8	5	7	11	24	15	4	7	99	...	.78	13.27
Scurvy ...	2	1	...	1	1	6	...	...	...	1	2	1	15	...	.12	...
Rheumatism ...	72	69	71	92	67	79	75	72	79	52	71	53	862	...	6.78	...
Venereal Diseases ...	167	167	196	171	179	197	140	129	179	137	134	143	1,942	15.44	...	...
Eye Diseases ...	11	17	27	25	37	43	18	29	35	31	32	30	334	...	2.66	...
Abscess and Ulcer ...	86	65	99	103	98	125	116	121	141	64	87	114	1,223	...	9.72	...
Wounds and Accidents ...	95	98	144	126	93	115	65	72	104	84	93	141	1,232	...	9.79	...
All other Causes ...	118	134	177	172	182	337	253	269	233	165	137	144	2,371	18.88	...	...
	1,053	678	1,151	1,344	1,023	2,607	1,634	1,863	1,922	1,503	1,490	1,461	18,839			
Admitted per cent. of the Average Strength in each Month.																
	9.82	7.55	10.31	10.29	11.46	19.07	12.38	14.14	11.65	11.51	11.02	11.87	140.80			

VII.

COMPARATIVE STATEMENT of the RATIOS of SICKNESS and MORTALITY among the EUROPEAN TROOPS serving in the various PROVINCES of the BENGAL PRESIDENCY during the Year 1868.

DISEASES.	BENGAL PROPER. Average Strength Daily Sick per cent. of Strength Admitted per cent. of Strength	DINAPORE, BENARES, OUDH AND CANNPORE. Average Strength Daily Sick per cent. of Strength Admitted per cent. of Strength	MEERUT AND ROHLICUND. Average Strength Daily Sick per cent. of Strength Admitted per cent. of Strength	AGRA AND CENTRAL INDIA. Average Strength Daily Sick per cent. of Strength Admitted per cent. of Strength	PUNJAB. Average Strength Daily Sick per cent. of Strength Admitted per cent. of Strength	BENGAL PRESIDENCY. Average Strength Daily Sick per cent. of Strength Admitted per cent. of Strength
Cholera	73-33	24	05	68-33	..	27
Smallpox ... ..	..	02	02	..	..	04
Fever, Intermittent	15	17-28	20-34	08	08	33-09
Fever, Remittent and Continued	1-57	6-86	11-89	1-25	1-68	14-15
Apoplexy	40-00	61	59	65-56	24-31	76
Delirium Tremens	3-45	46	40	6-00	19-45	44
Dysentery	6-15	3-60	3-17	2-50	2-73	3-49
Diarrhoea ... ..	..	6-05	6-31	..	7-90	7-82
Hepatitis	6-21	4-91	7-70*	6-30	4-95	5-10
Spleen Disease	15	43	46	..	57	60
Respiratory Diseases	74	5-76	7-49	7-5	7-78	7-09
Phthisis Pulmonalis	10-00	8-0	10-09	13-24	13-37	10-1
Scurvy ... ..	..	02	..	..	..	08
Rheumatism	3-61	7-65	6-92	6-31	6-78	6-83
Veneral Diseases	30-74	25-41	18-64	17-56	15-44	19-92
Eye Diseases	1-32	2-88	2-51	3-04	2-96	3-73
Abscess and Ulcer	13-55	11-43	9-80	10-70	9-72	10-59
Wounds and Accidents	10-25	11-61	8-60	11-87	9-79	10-36
All other Causes	21-85	24-83	18-16	17-29	18-85	20-46
Did out of Hospital ... ..	..	..	..	..	..	..
Total	175-76	131-85	124-16	143-91	149-80	143-83
						20-11

See Note to Table IV.

VIII.

STATIONS.	Period of Observation.	Average Strength during the period of observation.	DAILY SICK PER CENT. OF AVERAGE STRENGTH IN EACH MONTH.												Daily Sick per cent. of Average Strength for the period of occupation.	Admitted per cent. of Average Strength.	DIED PER 1,000 OF AVERAGE STRENGTH.			
			Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.			A.	B.		C.
																		All other Causes.	In Hospital.		Out of Hospital.
Fort William	...	688	698	453	398	450	548	515	589	626	608	599	571	138.55	5.83	16.31	2.33	24.47		
Dum-Dum	...	655	226	164	871	361	448	396	632	517	608	684	607	172.45	...	18.43	1.80	16.25		
Barrackpore	...	441	733	700	617	617	617	617	617	617	617	617	617	192.74	...	31.74	4.54	38.56		
Barrackpore	...	281	194	194	194	194	194	194	194	194	194	194	194	249.68	...	26.52	...	45.98		
Darjeeling	9 Months, March to November	105	...	...	...	...	...	...	...	...	...	...	...	135.24	...	28.57	...	28.57
Darjeeling	9 Months, January to November	104	...	...	...	...	...	...	...	...	...	...	...	180.77	...	19.23	...	19.23
Darjeeling	9 Months, April to December	104	...	...	...	...	...	...	...	...	...	...	...	135.24	...	19.23	...	19.23
Hasanabad	...	105	...	...	...	...	...	...	...	...	...	...	...	180.77	...	24.50	...	24.50
Hasanabad	...	104	...	...	...	...	...	...	...	...	...	...	...	135.24	...	16.06	...	16.06
Dinapore	...	685	779	689	706	689	772	756	693	675	646	438	691	158.08	...	1.17	...	1.17		
Benares	...	685	691	446	485	571	667	693	693	693	693	693	693	140.27	...	1.51	...	1.51		
Benares	...	685	691	446	485	571	667	693	693	693	693	693	693	140.27	...	1.51	...	1.51		
Benares	...	685	691	446	485	571	667	693	693	693	693	693	693	140.27	...	1.51	...	1.51		
Benares	...	685	691	446	485	571	667	693	693	693	693	693	693	140.27	...	1.51	...	1.51		
Benares	...	685	691	446	485	571	667	693	693	693	693	693	693	140.27	...	1.51	...	1.51		
Benares	...	685	691	446	485	571	667	693	693	693	693	693	693	140.27	...	1.51	...	1.51		
Benares	...	685	691	446	485	571	667	693	693	693	693	693	693	140.27	...	1.51	...	1.51		
Benares	...	685	691	446	485	571	667	693	693	693	693	693	693	140.27	...	1.51	...	1.51		
Benares	...	685	691	446	485	571	667	693	693	693	693	693	693	140.27	...	1.51	...	1.51		
Benares	...	685	691	446	485	571	667	693	693	693	693	693	693	140.27	...	1.51	...	1.51		
Benares	...	685	691	446	485	571	667	693	693	693	693	693	693	140.27	...	1.51	...	1.51		
Benares	...	685	691	446	485	571	667	693	693	693	693	693	693	140.27	...	1.51	...	1.51		
Benares	...	685	691	446	485															

Frontier War	...
Huzara Field Force	...
Road-making	Detachments,
Murree Hills	...
Road-making	Detachments,
Dalhousie Hills	...

EUROPEAN TROOPS, 1868.

IX.

TABLE showing the *RATIO* in which the *PRINCIPAL DISEASES* have contributed to make up the *ADMISSION RATE* of the *YEAR* in the *CHIEF MILITARY STATIONS* of the *BENGAL PRESIDENCY*.

STATIONS.	Average Strength during the period of occupation.	ADMITTED INTO HOSPITAL PER CENT. OF AVERAGE STRENGTH.											Admitted per cent. of Average Strength from all Causes.
		Cholera.	Heat Apoplexy.	Fever.	Dysentery.	Diarrhoea.	Hepatitis.	Ophthalmia.	Rheumatism.	Veneral Diseases.	Diseases of the Respiratory Organs.	All other Causes.	
Fort William	858	58	23	35.32	11.07	8.86	5.83	70	3.38	25.06	7.61	36.71	135.55
Dum-Dum	555	...	18	50.83	13.51	9.91	3.96	1.80	2.70	37.48	7.21	46.05	172.43
Barrackpore	441	45	45	39.46	10.20	12.47	9.52	91	5.90	31.52	6.35	75.51	192.74
Berhampore (9 months)	281	3.07	...	100.54	6.90	4.21	7.66	3.07	1.91	27.20	38	33.72	248.66
Darjeeling (11 months)	446	...	...	23.32	45	2.02	3.14	90	7.17	7.62	9.19	40.58	94.39
Darjeeling Depôt (9 months)	105	...	95	12.38	6.67	5.71	7.62	2.86	22.66	14.28	10.48	51.43	135.24
Hazareebaugh	104	...	...	44.23	96	4.81	2.88	5.77	16.35	31.73	9.62	64.42	180.77
Dinapore	854	23	70	12.53	7.96	12.18	8.08	3.05	10.07	31.97	6.09	65.22	158.06
Benares	663	30	...	21.27	1.51	6.45	3.62	2.41	9.50	30.62	4.98	57.61	140.27
Fyzabad	829	...	84	11.22	3.26	3.74	3.02	2.53	4.95	17.61	4.46	30.28	81.91
Lucknow	2,215	41	77	15.39	4.24	5.37	4.11	2.79	5.73	24.74	4.70	54.06	122.34
Seetapore (9 months)	553	...	72	29.11	1.63	4.52	4.52	3.08	5.14	9.40	5.87	30.74	97.83
Futtehghur	232	...	86	27.16	2.58	9.49	4.74	2.50	6.46	15.95	3.02	26.72	99.57
Cawnpore	722	42	42	30.61	1.06	4.85	2.63	3.04	6.37	26.04	6.37	46.81	129.22
Allahabad	910	22	55	55.39	3.52	11.54	8.35	3.41	8.02	39.67	5.93	46.24	184.84
Shahjehanpore (9 months)	437	...	91	9.61	2.75	2.29	5.95	1.83	1.83	25.17	2.29	19.68	72.31
Bareilly	894	...	11	15.32	1.90	3.09	5.15	2.35	3.47	26.29	1.68	23.60	83.56
Nynce Tal Depôt (8 months)	337	...	30	29.97	5.34	6.82	34.73	1.78	11.87	29.08	7.72	72.40	200.00
Landour Depôt (7 months)	206	...	...	32.04	2.43	10.68	5.82	1.94	12.62	5.34	13.11	43.20	127.18
Roorkee	320	...	...	20.31	2.19	2.50	3.12	1.88	3.12	9.38	3.12	40.63	86.25
Moradabad (10 months)	313	...	32	7.35	3.19	3.19	2.56	1.28	7.99	20.77	3.51	21.41	71.57
Meerut	1,616	12	87	34.84	2.48	9.03	5.20	2.97	4.95	13.12	10.58	42.88	127.04
Delhi	301	...	100	117.94	2.99	8.31	12.29	2.32	12.29	16.61	15.61	50.17	239.53
Muttra	425	...	71	28.00	5.41	1.88	3.06	2.59	13.88	9.65	5.88	21.65	92.71
Agra	608	33	33	15.07	1.10	3.85	3.96	4.96	5.62	15.31	5.95	41.96	99.34
Morar	784	26	77	60.26	51	6.50	3.83	2.80	7.78	18.49	7.78	51.79	169.77
Gwalior Citadel	220	...	182	29.55	2.27	4.55	2.27	...	2.27	13.18	45	35.46	91.82
Seepree (10 months)	146	...	...	81.93	1.37	2.74	2.74	69	7.53	15.07	2.74	26.71	144.52
Jhansi	557	...	18	99.82	2.87	5.92	5.57	3.05	8.44	17.96	9.87	45.24	196.92
Nowgong	185	...	54	12.97	54	54	4.87	2.70	1.08	27.03	3.24	19.46	72.97
Saugor	763	30	26	69.20	3.67	7.08	7.96	2.88	6.82	16.65	6.55	46.92	168.28
Jubbulpore	633	2.53	16	38.07	2.21	8.37	9.95	2.37	5.37	18.96	5.53	37.28	130.90
Umballa	972	...	72	67.70	41	4.42	3.60	3.91	10.39	9.26	8.13	41.25	149.79
Dugshale (10 months)	727	...	...	11.14	2.89	3.71	2.20	83	3.17	5.50	3.30	24.07	56.81
Subathoo (9 months)	670	...	15	13.58	1.64	6.12	4.63	1.64	5.52	11.19	6.57	22.09	73.13
Kussowlie Depôt (8 months)	380	...	...	22.37	3.68	4.47	3.16	3.42	11.32	13.16	3.68	31.84	97.10
Phillour	70	...	...	115.71	1.43	22.86	1.43	1.43	21.43	22.86	8.57	75.71	271.43
Julundur (9 months)	750	...	40	88.13	3.20	11.87	2.93	2.53	4.53	10.40	8.00	25.47	157.46
Ferozepore	817	...	86	40.08	1.71	5.88	2.94	2.32	4.40	12.73	6.94	53.12	141.93
Mooltan	773	...	82	30.38	1.16	3.23	1.94	5.30	5.81	19.25	7.36	52.20	127.13
Dera Ismael Khan	99	...	...	12.12	3.03	3.03	...	7.07	2.02	13.13	4.04	45.46	89.90
Sealkote	974	...	10	26.39	2.87	6.78	3.49	4.42	8.83	11.29	12.22	47.33	123.82
Kangra	74	...	...	27.03	2.70	2.70	1.35	1.35	2.70	28.38	9.46	28.38	104.05
Dhurmaalla Depôt (7 months)	109	...	...	37.62	5.51	4.59	10.09	...	6.42	23.85	2.75	23.85	114.08
Umrtsur and Govindghur	130	...	77	19.23	77	8.46	4.62	4.62	2.31	16.92	3.84	26.92	88.46
Fort Lahore	84	...	2.38	188.10	4.76	10.71	4.76	1.19	3.57	11.91	13.10	53.57	294.05
Meean Meer	888	...	172	85.12	3.04	11.64	4.15	3.75	6.98	15.08	13.06	66.40	210.94
Rawul Pindie (11 months)	1,170	...	17	52.91	2.82	7.09	2.05	1.54	5.90	15.13	9.06	28.37	125.64
Campbellpore (10 months)	364	...	27	15.38	82	4.12	3.30	1.93	3.85	14.01	5.22	30.22	79.12
Attock	162	...	61	61.73	6.79	3.09	6.79	62	3.09	23.46	1.85	49.33	157.41
Murree Depôt (8 months)	284	...	...	66.90	1.41	7.04	4.93	35	4.23	17.61	1.76	25.35	129.54
Nowshera	553	...	18	92.95	3.44	2.53	4.16	36	5.42	7.41	3.44	32.37	152.26
Peshawar	1,676	...	30	114.98	2.33	9.31	4.71	2.21	5.01	20.11	7.04	36.81	202.31

EUROPEAN TROOPS, 1868.

X.

TABLE showing the PREVALENCE of SMALLPOX in each MONTH, and the DISTRIBUTION of the DISEASE by STATIONS and PROVINCES.

STATIONS.	Average Strength for the period of observation.	NUMBER OF ADMISSIONS INTO HOSPITAL IN EACH MONTH.												Total Admissions of the Year.	Admitted per cent. of the Average Strength.	Number of Deaths.	Died per 1,000 of the Average Strength.
		Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.				
Chinsurah Depôt ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Invalids, Recruits, and Volunteers on march ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Fort William ...	858	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Dum-Dum ...	555	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Barrackpore ...	441	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Berhampore ...	261	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	2,059	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Darjeeling ...	446	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Darjeeling Depôt ...	105	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Hazareebaugh ...	104	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Dinapore ...	854	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Benares ...	663	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Fyzabad ...	820	1	...	1	...	...	...	...	...	...	...	...	...	2	...	...	...
Lucknow ...	2,215	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Sectapore ...	553	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Futteghur ...	232	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Cawnpore ...	722	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Allahabad ...	910	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	7,438	1	...	1	...	...	...	...	...	...	...	...	...	2	02	...	...
Shahjehanpore ...	437	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Bareilly ...	894	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Nynee Tal Depôt ...	337	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Landour Depôt ...	206	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Roorkee ...	320	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Sappers, Chukrata Road ...	17	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Moradabad ...	313	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Meerut ...	1,016	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Delhi ...	301	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Muttra ...	425	...	...	...	...	...	...	...	...	...	...	...	1	1	...	...	...
	4,582	...	...	...	...	...	...	...	...	...	...	...	1	1	02	...	...
Agra ...	909	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Morar ...	784	...	...	...	...	...	...	...	...	...	...	...	3	3	...	...	...
Gwallior Citadel ...	230	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Seepree ...	146	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Jhansi ...	557	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Nowgong ...	185	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Saugor ...	763	...	...	...	...	...	...	...	...	...	...	...	1	1	...	...	...
Jubbulpore ...	633	...	...	3	...	...	...	...	...	...	...	...	1	3	...	...	...
	4,170	...	...	3	...	...	...	...	...	...	...	...	5	8	19	...	...
Umballa ...	972	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Dugshale ...	727	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Kusowlee Depôt ...	380	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Subathoo ...	670	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Phillour ...	70	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Jullundur ...	750	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Ferozepore ...	817	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Mooltan ...	771	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Dera Ismail Khan ...	89	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Sealkote ...	974	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Dhumsalla Depôt ...	109	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Kangra ...	74	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Umritsur and Govindghur ...	130	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Fort Lahore ...	81	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Mecan Meer ...	988	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Rawul Pindoe ...	1,170	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...
Campbellpore ...	364	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Attock ...	162	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Huzara Field Force ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Murree Depôt ...	284	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Family Camp near Murree ...	78	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Road-making Detachment, Murree Hills ...	647	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Road-making Detachment, Dalhousie Hills ...	186	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Nowshera ...	553	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Peshawur ...	1,676	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Troops marching (Punjab) ...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	12,576	1	1	...	...	...	...	...	...	...	...	...	...	2	02	...	...
Troops on the march, Bengal and N. W. Provinces ...	...	...	1	...	...	...	...	...	...	...	...	...	...	1	...	...	...
Bengal Presidency ...	31,500	2	2	4	...	...	...	...	...	...	...	...	6	14	04	...	...

EUROPEAN TROOPS, 1868.

XI.

TABLE showing the PREVALENCE of CHOLERA in each MONTH, and the DISTRIBUTION of the DISEASE by STATIONS and PROVINCES.

STATIONS.	Average Strength during the period of occupation.	NUMBER OF ADMISSIONS INTO HOSPITAL IN EACH MONTH.												Total Admissions of the Year.	Admitted per cent. of the Average Strength.	Number of Deaths.	Died per 1,000 of the Average Strength.
		Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.				
Chinsurah Depôt ...	304	...	1	...	6	5	7	...	...	...	1	...	1	21	...	17	...
Invalids, Recruits and Volunteers on march ...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...	1	...
Fort William ...	858	...	...	2	1	...	...	...	...	...	...	1	1	5	...	5	...
Dum-Dum ...	555	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Barrackpore ...	441	...	...	...	...	...	2	...	...	...	...	...	...	2	...	1	...
Berhampore (9 months) ...	261	...	...	1	...	2	...	5	...	...	...	...	...	8	...	5	...
	2,039	...	...	3	1	2	2	5	...	...	...	1	1	15	73	11	5.34
Darjeeling (11 months) ...	446	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Darjeeling Depôt (9 months) ...	105	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Hazareebaugh ...	104	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Dinapore ...	854	...	...	...	...	...	1	...	...	1	...	...	...	2	...	1	...
Benares ...	663	...	...	...	...	...	...	...	1	1	...	...	...	2	...	1	...
Fyzabad ...	620	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Lucknow ...	2,215	...	...	...	1	...	...	...	6	1	...	...	1	6	...	7	...
Seetapore (9 months) ...	553	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Putteghur ...	232	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Cawnpore ...	722	...	...	...	...	...	...	...	3	...	...	...	...	3	...	...	...
Allahabad ...	910	...	...	...	...	...	...	...	1	1	...	...	...	2	...	2	...
	7,434	...	...	...	1	...	1	...	11	4	...	...	1	16	24	11	1.48
Shahjehanpore (9 months) ...	437	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Bareilly ...	894	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Nynce Tal Depôt (8 months) ...	337	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Landour Depôt (7 months) ...	206	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Roorkee ...	320	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Sappers, Chuckrata Road (9 months) ...	17	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Moradabad (10 months) ...	313	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Meerut ...	1,616	...	...	...	1	...	...	...	1	...	...	...	...	2	...	...	...
Delhi ...	301	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Muttra ...	425	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	4,582	...	...	...	1	...	...	...	1	...	...	...	...	2	105	...	...
Agra ...	908	...	...	...	...	...	...	...	2	...	1	...	...	3	...	...	...
Morar ...	784	...	...	...	...	...	...	...	1	...	...	...	...	2	...	...	...
Gwallior Citadel ...	220	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Seepree (10 months) ...	146	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Jhansi ...	557	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Nowgong ...	185	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Saugor ...	763	...	...	...	...	...	...	...	1	...	2	...	...	3	...	2	...
Jubbulpore ...	633	...	...	...	...	3	10	3	...	...	...	...	...	16	...	12	...
	4,170	...	...	...	...	3	10	3	4	1	2	...	1	24	58	14	3.36
Umballa ...	972	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Dughaie (10 months) ...	727	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Kussowlic Depôt (8 months) ...	360	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Subathoo (9 months) ...	670	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Phillour (11 months) ...	70	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Jullundur (9 months) ...	760	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Ferozepore ...	817	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Mooltan ...	774	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Dera Ismail Khan ...	99	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Sealkote ...	974	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Dhurmalla Depôt (7 months) ...	109	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Kangra ...	74	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Umritsur and Govindghur ...	130	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Fort Lahore ...	84	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Meean Meer ...	988	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Rawul Pindee (11 months) ...	1,170	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Campbellpore (10 months) ...	364	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Attock ...	162	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Huzara Field Force ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Murree Depôt (6 months) ...	281	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Family Camp near Murree (6 months) ...	78	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Road-making Detachment, Murree Hills (3 months) ...	647	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Dalhousie Hills (6 months) ...	186	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Nowshera ...	553	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Peshawur ...	1,676	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Troops marching in the Punjab ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	12,576	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Troops marching in Bengal and N. W. Provinces ...	...	...	...	3	1	...	...	...	...	...	...	2	...	6	...	3	...
Bengal Presidency ...	31,500	...	1	6	10	10	20	8	18	5	3	4	4	87	27	57	1.81

EUROPEAN TROOPS, 1868.

XIII.

TABLE showing in detail the CAUSES of DEATH and INVALIDING.

TOTAL LOSS OF THE ARMY OF THE BENGAL PRESIDENCY BY DEATHS AND INVALIDING, 2,040. PER 1,000 OF AVERAGE STRENGTH, 66'38.							
LOSS OF THE ARMY BY DEATH 635.				LOSS OF THE ARMY BY INVALIDING 1,405.			
CAUSES OF DEATH.	Died in Hospital.	Died out of Hospital.	Died per 1,000 of Strength.	CAUSES OF INVALIDING.	Invalided for Discharge from the Service.	Invalided for Change of Climate.	Invalided per 1,000 of Strength.
Cholera	57	...	1'81	Febris, Intermittens	1	76	2'69
Varicella	...	...	...	" Remittens et Continua	...	6	...
Tonsillitis	1	...	...	Ophthalmia	...	8	2'6
Influenza	1	...	...	Dysentery	1	39	1'72
Febris, Intermittens	7	...	...	Diarrhoea	2	11	...
" Remittens	31	...	2'68	Rheumatismus	21	77	3'17
" Continua	53	...	...	Syphilis Secundaria	20	69	2'98
Dysentery, Acuta	31	...	1'52	Stricture Urethrae	1	2	...
" Chronica	17	...	...	Tania, Echinococcus	...	1	...
Diarrhoea	6	...	10	Anaemia	2	42	...
Rheumatismus	3	...	...	Anasarca	...	1	...
Syphilis Secundaria	4	...	...	Scrofula	5	7	...
Hydrophobia	1	...	...	Phthisis Pulmonalis	48	56	3'56
Ebricitas	4	...	...	Haemoptysis	...	6	...
Anaemia	2	...	...	Morbus Coxae	...	1	...
Cancer, Epithelial	2	...	...	Insolatio	2	7	2'29
" Internal	6	...	...	Epilepsia	9	5	1'45
Phthisis Pulmonalis	49	...	1'55	Chorea	1	1	...
Scrofula	2	...	...	Meningitis	...	1	...
Abscessus Psoanus	1	...	...	Mania	7	1	...
Morbus Coxae	1	...	...	Dementia	12	6	90
Meningitis	1	...	...	Melancholia	...	2	...
Encephalitis	2	...	...	Paralysis	9	7	...
Tetanus	2	...	...	Cereitas	6	3	...
Delirium Tremens	12	...	38	Dysaetia	1	2	...
Apoplexia et Insolatio	98	2	2'78	Cephalaea	1	18	...
Paralysis	5	...	...	Pericarditis	...	1	...
Dementia	1	...	...	Morbus Cordis	74	56	3'85
Syncope	1	...	...	Aneurisma	5	1	...
Pericarditis	3	...	...	Palpitatio	...	2	...
Morbus Cordis	22	1	1'36	Syncope	...	1	...
Aneurisma (Aortic)	18	...	...	Varix	10	7	...
Laryngitis	1	...	...	...	...	1	...
Bronchitis	6	...	79	Bronchitis	10	27	1'49
Pneumonia	16	...	...	Pleuritis	...	3	...
Gastritis	2	...	...	Asthma	...	5	...
Enteritis	2	...	...	Pharyngitis	...	1	...
Peritonitis	1	...	...	Peritonitis	...	1	...
Hepatitis, Acuta	52	...	3'42	Dyspepsia	2	5	...
" Chronica	36	...	...	Hernia	17	4	...
Cirrhosis	1	...	...	Haemorrhoids	...	1	...
Icterus	3	...	...	Fistula in Ano	...	4	...
Ascites	1	...	...	Splenitis	1	1	...
Nephria	5	...	...	Hepatitis	18	174	6'22
Extravasation of Urine	1	...	...	Icterus	...	1	...
Synovitis	1	...	...	Cirrhosis	1	...	...
Abscess (after Typhoid Fever)	1	...	...	Ascites	1	...	...
Atrophy and Debility	1	...	10	Nephritis	3	6	...
Accident	5	7	...	Cystitis	...	2	...
Suicide	...	11	...	Varicocele	3	1	...
Drowning	...	15	...	Orchitis	1	3	...
Asphyxia	...	1	1'62	Arthritis	1	3	...
Suffocated while drunk	...	5	...	Synovitis	2	2	...
Murder	...	2	...	Periostitis	...	2	...
Execution	...	2	...	Exostosis	...	1	...
				Caries	1	3	87
				Necrosis	...	2	...
				Contractura	4	...	...
				Anchylosis of Wrist-joint	2	...	...
				Curvature of Spine	1	...	...
				Abscess	...	3	...
				Ulcer	6	13	...
				Tumour	...	1	...
				Debility (worn out)	100	100	10'12
				Subluxation	1	...	...
				Dislocation	...	1	...
				Fracture	7	9	...
				Contusion	...	3	91
				Incised Wound	...	1	...
				Gunshot	1	...	...
				Amputation	1	...	...
				Causes not specified	...	8	...
Ratio per 1,000 for Deaths from causes not specially calculated above	...	...	1'71	Ratio per 1,000 for Invaliding from causes not specially calculated above	...	...	6'00
	580	46	20'11		121*	884*	45'49*

* This total does not include 55 men of the 101st Regiment who went to England with the Regiment, who would otherwise have appeared as Invalids of the season; with the addition of these Invalids, and the strength of the 101st, the Invaliding Ratio becomes 48'23 per 1,000.

EUROPEAN TROOPS, 1868.

XIV.

STATEMENT showing the GAIN and LOSS of the REGIMENTS of the ARMY of BENGAL in STRENGTH during the YEAR.

	Sappers and Miners.	Artillery.	Cavalry.	Infantry.	Army of Bengal.
<i>Strength at the beginning of the Year.</i>					
At Head Quarters and on Detachment on 1st January 1868*	62	5,366	2,763	23,145	31,336
Recruits from England in India on march to join ... ..	..	15	13	230	258
On Staff employment	78	12	17	23	130
In Military and other Prisons ... ..	...	15	5	135	155
Elsewhere, sick in other Hospitals, and men remaining at Convalescent Depôts ... ..	...	84	29	1,203	1,316
Total Strength in India on 1st January 1868 ...	140	5,492	2,827	24,736	33,195
<i>Additions during the Year.</i>					
Transfers received from other Regiments ... ..	...	616	12	198	826
Transferred from Regiments leaving India by { From Bengal Presidency ... ..	...	25	57	333	415
volunteering { From other Presidencies ... ..	...	23	29	323	375
Recruited in India { New Soldiers ... ..	...	15	15	66	96
Received from England, landed after 1st January { Time-expired men ... ..	...	6	1	5	12
Deserters rejoined { Recruits	7	1,009	318	2,684	4,018
... .. { Invalids returned ... ..	...	...	27	142	169
... ..	...	1	2	8	11
Total Additions of the year ...	7	1,695	461	3,759	5,922
<i>Loss during the Year.</i>					
Transfers given to other Regiments	5	631	19	366	1,021
Time-expired men, who have left the service	1	71	39	1,264	1,375
Men who have purchased their discharge ... ..	...	8	11	28	47
Men discharged otherwise ... ..	...	...	...	3	3
Invalided { For Discharge ... ..	...	54	41	324	419
Dismissed by sentence of Court Martial { For Change of Climate	5	242	80	656	983
Deserted ... ..	...	8	1	11	20
Died at Head Quarters and on Detachment ... ..	...	8	5	34	47
Died absent from the Regiment { At Convalescent Depôts ... ..	...	107	42	394	543
... .. { In other Hospitals	(6)†	21	2	31	60
Total Loss of the year ...	17	1,159	245	3,126	4,547
Strength remaining, including all men borne on the Rolls who are in India ...	130	6,028	3,043	25,369	34,570
ABSTRACT.					
Remained on 1st January 1868 ... ..	...	...	...	33,195	
Added during 1868 ... ..	...	...	...	5,922	
Total ...	...	...	...	39,117	
Deduct Loss during 1868 ... ..	...	...	...	4,547	
Remain at date of Return ... ..	...	...	...	34,570	

* The Regiments received on the strength of the Army during the year which landed after the 1st January, return their strength as at the date of their arrival in India; hence, in the present year, the strength shown in the beginning of the year approximates not to the strength of January, but of May, as it appears in the leading Table. The excess over the strength of May, of 450, which is shown in this statement, results from the fact of the recruits remaining in the Bombay Depôts having been included as portion of the regimental strength.

The number shown as remaining is also in excess of the actual, as the regiments which left the Presidency before the end of December are included, and their strength given as at the date of departure.

† It is obvious that the loss above recorded is not an absolute in the case of the 1,021 men who were transferred to other regiments.

† Died while absent on Staff employment.

EUROPEAN TROOPS, 1868.

XV.

DISTRIBUTION of the EUROPEAN ARMY of the BENGAL PRESIDENCY on 3rd July 1868.

STRENGTH OF THE ARMY ON 3rd JULY 1868, 33,280.					
ARTILLERY.			INFANTRY.		
	STATION.	STRENGTH.		STATION.	STRENGTH.
A. Horse Brigade A. Battery	Meerut	129	3rd Regiment, 1st Battalion	Meerut	700
B. "	Peshawur	121	5th " 1st "	Ferozepore	764
C. "	Lucknow	126	" " "	Kangra	69
D. "	Meerut	119	6th " 1st "	Rawulpindee	778
E. "	Peshawur	123	7th " 1st "	Saugor	649
C. Horse Brigade F. "	Benares	134	" " "	Barrackpore	81
F. Horse Brigade A. "	Umballa	129	11th " 1st "	Fyzabad	725
B. "	Sealkote	120	12th " 2nd "	Jubbulpore	520
C. "	Morar	101	" " "	Nowgong	197
D. "	Rawulpindee	136	10th " 1st "	Rawulpindee	246
E. "	Umballa	116	" " "	Murree Hills	500
F. "	Mecan Meer	128	25th " 2nd "	Shahjehanpore	411
8th Brigade B. Battery	Lucknow	112	" " "	Berhampore	363
C. "	Morar	112	26th " "	Dum-Dum and Fort William	867
D. "	Bareilly	144	38th " "	Peshawur	494
E. "	Fyzabad	136	" " "	Attock	110
F. "	Sectapore	135	37th " "	Bareilly	771
G. "	Cawnpore	140	38th " "	Sealkote	633
H. "	Agra	144	" " "	Dalhousie Hills	186
16th Brigade A. Battery	Hazareebaugh	103	41st " "	Agra	757
B. "	Meerut	114	55th " "	Lucknow	783
C. "	Barrackpore	130	56th " "	Darjeeling	430
D. "	Barrackpore	134	" " "	Benares	238
E. "	Saugor	116	" " "	Chunar	50
F. "	Dinapore	111	60th " 2nd Battalion	Fort William	788
G. "	Jubbulpore	92	77th " "	Nowshera	473
19th Brigade A. Battery	Jhansi	124	" " "	Murree Hills	150
B. "	Peshawur	114	79th " "	Roorkee	280
C. "	Meerut	113	" " "	Delhi	268
D. "	Mooltan	115	85th " "	Mecan Meer	705
E. "	Rawulpindee	87	" " "	Fort Lahore	64
F. "	Mecan Meer	99	88th " "	Peshawur	735
G. "	Jullundur	119	90th " "	Subathoo	608
22nd Brigade A. Battery	Allahabad	123	92nd " "	Jullundur	614
B. "	Ferozepore	127	" " "	Phillour	79
3. "	Lucknow	68	" " "	Unrisur	60
4. "	Peshawur	61	93rd " "	Jhansi	397
5. "	Morar	60	" " "	Seepree	119
6. "	Mecan Meer	50	" " "	Barrackpore	120
7. "	Agra	49	101st " "	Cawnpore	491
24th Brigade 1. Battery	Mooltan	66	" " "	Futteghur	219
2. "	Mecan Meer	71	102nd " "	Lucknow	822
3. "	Meerut	53	103rd " "	Morar	434
4. "	Allahabad	31	" " "	Gwalior Fortress	220
5. "	Morar	40	104th " "	Dugshale	760
" " "	Fort Lahore	16	105th " "	Dinapore	730
6. "	Unrisur	67	106th " "	Umballa	608
25th Brigade Head Quarters	Allahabad	4	107th " "	Allahabad	640
1. Battery	Darjeeling	53	" " "	Fort Allahabad	185
2. "	Delhi	26	109th " "	Mooltan	642
3. "	Fort William	67	" " "	Dera Ismael Khan	100
4. "	Attock	49	3rd Battalion Rifle Brigade	Sectapore	431
5. "	Bombay Presidency*	...	" " "	Moradabad	324
Artillery Recruits	Barrackpore	74	CONVALESCENT DEPOTS.		
Sappers and Miners	Roorkee	20	" " "	Darjeeling	103
"	Chuckrata Road	20	" " "	Nyne Tal	312
CAVALRY.			" " "	Landour	207
5th Lancers	Lucknow	433	" " "	Kussowlie	380
4th Hussars	Meerut	443	" " "	Dhurmsalla	112
7th "	Sealkote	339	" " "	Murree	287
11th "	Muttra	424	" " "	Family Camp near Murree	84
19th "	Benares	218	PRESIDENCY DEPOT.		
"	Cawnpore	139	" " "	Chinsurah	277
20th Hussars	Campbellpore	279			
"	Sydn Bowlee	96			
21st Hussars	Umballa	302			

* Temporarily located on its return from Abyssinia.

† Head Quarters arrived 14th July 1868.

ABSTRACT of the RETURNS showing the ADMISSIONS,

1.—REGIMENTS of BENGAL PROPER,

REGIMENTS & BATTERIES, & STATION of 1868.				Year of Arrival in the Bengal Presidency.	Date of Arrival from Station previously occupied.	Average Strength during 1868.	Abridged Statement of Loss, per 1,000 of Average Strength.	Loss per 1,000.	
								By Death.	By Invaliding.
1	260th Regiment, Fort William ... ..	...	...	1867 a	October 1867, from England	791	131.3	29.55	21.49
2	XXV Brigade, 3 Battery, R. Art., Fort William ... ..	...	...	...	.....	67	139.70	11.93	71.63
3	26th Regiment, Dum-Dum (6 months) ... ..	...	...	1868 a	28th June 1868, from England	895	87.71	8.94	25.70
4	XVI Brig., C. Battery, R. Art., Barrackpore ... ..	...	...	...	December 1864, from Hazareebaugh	136	139.56	29.41	41.67
5	XVI Brig., D. Battery, R. Art., Barrackpore ... ..	...	...	...	December 1864, from Dinapore	133	139.56	45.11	19.32
6	{ Wing 2-25th Regiment, Berhampore and Barrack- pore (11 months) ... ..	...	...	1868	January 1868, from Ceylon	363	128.4	1.33	38.37
7	XVI Brig., A. Battery, R. Art., Hazareebaugh ... ..	...	...	...	February 1867, from Jubbulpore	92	233.33	32.60	141.30
8	105th Regiment, Dinapore ... ..	...	...	1866 b	February 1866, from Madras Presidency	796	133.50	12.63	54.92
9	XVI Brig., F. Battery, R. Art., Dinapore ... ..	...	...	...	December 1864, from Barrackpore	129	161.34	38.75	62.91
10	10th Hussars, Head Quarters, Benares ... ..	...	...	...	January 1868, from Meerut	226	133.7	3.12	84.97
11	58th Regiment, Left Wing, Benares ... ..	...	...	1864 a	November 1864, from England	303	156.73	29.70	42.39
12	C. Brig., F. Battery, R. H. Art., Benares ... ..	...	...	...	December 1865, from Lucknow	135	134.15	29.63	29.63
13	1-11th Regiment, Fyzabad ... ..	...	...	1864 a	October 1864, from England	799	141.32	19.51	26.25
14	VIII Brig., E. Battery, R. Art., Fyzabad (9 months) ... ..	...	...	1868 a	6th April 1868, from England	139	136.00	29.36	21.55
15	5th Lancers, Lucknow ... ..	...	...	1864 a	January 1864, from England	455	136.70	24.18	41.76
16	55th Regiment, Lucknow ... ..	...	...	1861 a	February 1866, from Dum-Dum	877	114.15	1.00	27.37
17	102nd Regiment, Lucknow (10 months) ... ..	...	...	1868 b	26th February 1868, from Kamptee	662	99.70	27.84	40.60
18	A. Brig., C. Battery, R. H. Art., Lucknow ... ..	...	...	1866 a	February 1866, from England	133	139.10	7.52	52.63
19	VIII Brig., B. Battery, R. Art., Lucknow ... ..	...	...	1866 a	December 1866, from England	141	179.43	28.37	196.38
20	XXII Brig., 3 Battery, R. Art., Lucknow ... ..	...	...	...	January 1865, from Morar	71	122.54	42.25	149.8
21	3rd. Battalion Rifle Brigade, Head Quarters, Seetapore ... ..	...	...	1857 a	April 1868, from Rawulpindee	534	161.19	22.31	27.88
22	VIII Brig., F. Battery, R. Art., Seetapore (9 months) ... ..	...	...	1868 a	3rd April 1868, from England	141	129.70	49.65	35.46

(a) From England.

(b) From Madras Presidency.

(c) From Bombay Presidency.

TABLE

REGIMENTS of BENGAL PROPER, BEHAR,

REGIMENTS & BATTERIES, & STATION OF 1868.	Year of Arrival in the Bengal Presidency.	Date of Arrival from Station previously occupied.	Average Strength during 1868.	Admission rate of 1868, per cent. of Average Strength.	Loss Per 1000.	
					By Deaths.	By Invaliding.
23 101st Regiment, Cawnpore and Futteghur (11 months)	b	November 1868, from Dugshale ...	733	100.41	13.64	...
24 10th Hussars, Left Wing, Cawnpore ...	b	March 1868, from Meerut ...	155	156.77	6.45	...
25 VIII Brig., G. Battery, R. Art., Cawnpore (9 months) ...	1868 a	8th April 1868, from England ...	141	113.14	70.92	...
26 XXII Brigade, A. Battery, R. Art., Allahabad ...	...	December 1866, from Meerut ...	115	150.43	31.78	...
27 XXIV Brigade, 4 Battery, R. Art., Allahabad ...	...	March 1865, from Attock ...	61	132.29	...	...
28 107th Regiment, Allahabad ...	b	November 1864, from Lucknow ...	802	...	...	...
REGIMENTS OF BENGAL PROPER, BEHAR, BENARES, OUDH, AND CAWNPORE ...			9,413	...	...	...

2.—REGIMENTS OF ROHILCUND, MEERUT,

1 2-25th Regiment, Head Quarters, Shahjehanpore ...	1868 a	8th April 1868, from Ceylon and Dum-Dum	486	126.41	...	...
2 3rd Bat. Rifle Brigade, Left Wing, Moradabad (9 months)	1857 a	March 1869, from Rawulpindee ...	338	70.71	...	...
3 37th Regiment, Bareilly ...	1867 a	December 1866, from England ...	807	72.41	...	...
4 VIII Brig., D. Battery, R. Art., Bareilly ...	1866 a	November 1867, from Seetapore ...	146	114.41	...	...
5 70th Regiment, Head Quarters, Roorkee ...	1867 a	December 1866, from Rawulpindee ...	343	114.41	...	...
6 Sappers and Miners, Roorkee and Chuckrata Road ...	...	A Stationary Corps ...	40	80.41	...	...
7 4th Hussars, Meerut, (10 months) ...	1868 a	8th March 1869, from England ...	405	100.13	...	...
8 1-3rd Regiment, Meerut ...	1867 a	January 1867, from England ...	762	97.97	18.97	...
9 A. Brigade, A. Battery, R. H. Art., Meerut ...	1866 a	March 1866, from England ...	139	100.72	7.19	...
10 A. Brigade, D. Battery, R. H. Art., Meerut ...	1865 a	March 1865, from England ...	131	83.21	...	...
11 XVI Brigade, B. Battery, R. Art., Meerut ...	...	February 1867, from Saugor ...	138	128.26	11.19	...
12 XIX Brigade, C. Battery, R. Art., Meerut ...	...	December 1866, from Agra ...	116	102.59	25.86	...
13 XXIV Brigade, 3. Battery, R. Art., Meerut ...	...	April 1866, from Peshawur ...	66	103.64	30.30	...
14 70th Regiment, Left Wing, Delhi ...	1857 a	December 1866, from Rawulpindee ...	379	108.69	5.50	...
15 XXV Brigade, 2 Battery, R. Art., Delhi ...	...	January 1865, from Saugor ...	49	220.41	20.41	...

(a) From England.

(b) Reorganized from Local Regiments.

* This total does not include 65 men of the 101st Regiment who went to England with the Regiment, who would otherwise have appeared

TABLE

REGIMENTS OF ROHILCUND, MEERUT,

REGIMENTS OF ROHILCUND, MEERUT, AGRA, AND CENTRAL INDIA									
REGIMENTS & BATTERIES, & STATIONS OF 1868.				Year of Arrival in the Bengal Presidency.	Date of Arrival from Station previously occupied.	Average Strength during 1868.	Admission rate of 1862, per cent of Average Strength.	Loss per 1,000.	
								By Death.	By Invaliding.
16	11th Hussars, Muttra...	...	...	1868b	13th January 1868, from Mhow	463	86.31	19.57	11.04
17	41st Regiment, Agra	...	...	1865a	December 1865, from England	847	95.51	9.15	65.49
18	VIII Brig., H. Battery, R. Art., Agra (10 months)	...	...	1868a	19th March 1868, from England	146	10.79	27.53	31.18
19	XXII Brig., 7 Battery, R. Art., Agra	...	...	...	April 1866, from Darjeeling	67	10.27	50.70	50.70
20	103rd Regiment, Morar and Gwalior	...	...	1867b	February 1867, from Bombay Presidency	771	10.55	11.47	90.79
21	F. Brigade, C. Battery, R. H. Art., Morar	...	...	...	December 1865, from Meerut	134	10.00	20.05	37.30
22	VIII Brig., C. Battery, R. Art., Morar	...	...	1866a	November 1867, from Fyzabad	147	10.00	15.61	54.42
23	XXII Brig., 5 Battery, R. Art., Morar	...	...	...	...	72	10.00	20.05	50.05
24	XXIV Brig., 5 Battery, R. Art., Morar	...	...	...	January 1865, from Lucknow	65	10.00	10.00	90.00
25	93rd Regiment, Jhansi	...	...	1857a	January 1867, from Sealkote	702	10.00	10.00	90.00
26	XIX Brig., A. Battery, R. Art., Jhansi	...	...	...	January 1868, from Ferozepore	181	10.00	7.00	93.00
27	1-7th Regiment, Saugor	...	...	1857a	January 1866, from Ferozepore	768	10.00	10.00	90.00
28	XVI Brig., E. Battery, R. Art., Saugor	...	...	...	January 1867, from Allahabad	137	10.00	10.00	90.00
29	Detachment 2-12th Regiment, Nowgong	...	...	1864a	February 1868, from Seetapore	(185)	10.00	10.00	90.00
30	2-12th Regiment, Jubbulpore	...	...	1864a	December 1867, from Seetapore	808	10.00	22.24	73.02
31	XVI Brig., G. Battery, R. Art., Jubbulpore	...	...	...	January 1867, from Hazareebaugh	126	10.00	10.00	90.00
REGIMENTS OF ROHILCUND, MEERUT, AGRA, AND CENTRAL INDIA						9,572	12.81	18.91	48.89

(a) From England.

(b) From Bombay Presidency.

AGRA, and CENTRAL INDIA,—continued.		CAUSES OF ADMISSIONS INTO HOSPITAL, OF DEATHS IN AND OUT OF HOSPITAL, AND OF THE INVALIDING OF 1888.																													
Total Admissions, and Loss of the Year and Deaths and Invaliding.		Cholera.	Smallpox.	Intermittent Fever.	Remittent and Continued Fevers.	Dysentery.	Diarrhoea.	Erysipelas.	Ophthalmia.	Rheumatism and Rheumatic Affections.	Primary Venereal Affections.	Secondary Venereal Affections.	Scurvy.	Anæmia and Debility.	Phthisis Pulmonalis and Hemoptysis.	Apoplexy, Epilepsy, and Brain Affections.	Neuralgic Affections.	Drunkenness.	Delirium Tremens.	Heart Disease and Aneurism.	Tonsillitis, Bronchitis, and Asthma.	Pleurisy and Pneumonia.	Spleen Disease.	Hepatitis.	Functional derangements of the Digestive System.	Diseases of the Urinary System.	Diseases of the Generative System.	Abscess and Ulcer.	Injuries and Accidents.	Punished.	All other causes.
16	{ Admissions 391 Deaths 9 Invaliding 1	...	...	45	73	23	8	1	10	56	38	12	...	2	2	3	4	2	...	...	24	2	...	13	16	...	...	31	17	...	9
17	{ Admissions 609 Deaths 1 Invaliding 1	4	1	117	18	11	45	1	16	39	127	11	...	18	16	6	20	8	3	22	50	6	3	53	41	...	4	68	74	...	27
18	{ Admissions 223 Deaths 1 Invaliding 1	1	...	4	30	1	12	...	28	7	4	10	...	3	...	3	11	...	...	1	5	...	...	3	10	1	4	39	33	...	13
19	{ Admissions 98 Deaths 1 Invaliding 1	2	...	5	8	2	9	...	1	3	13	3	...	1	...	2	3	3	1	...	9	...	1	3	6	...	1	4	13	...	5
20	{ Admissions 1,040 Deaths 2 Invaliding 1	1	...	451	21	11	46	3	16	38	96	27	...	15	9	14	19	12	4	2	27	1	...	18	41	1	9	69	74	...	15
21	{ Admissions 201 Deaths 1 Invaliding 1	...	...	47	10	2	13	...	3	5	20	1	...	3	1	2	3	4	...	5	10	...	...	4	10	1	1	25	27	...	4
22	{ Admissions 249 Deaths 1 Invaliding 1	1	...	47	2	...	12	...	4	11	37	2	...	2	...	6	8	7	...	2	16	...	1	5	9	...	9	28	33	...	7
23	{ Admissions 137 Deaths 1 Invaliding 1	...	...	46	1	...	4	2	4	9	4	...	1	3	...	...	2	10	2	5	4	...	...	13	3	...	...	5	15	...	4
24	{ Admissions 85 Deaths 1 Invaliding 1	...	1	37	...	1	4	...	...	2	7	1	...	...	2	...	...	1	...	3	2	2	...	3	1	...	...	6	11	...	1
25	{ Admissions 1,350 Deaths 1 Invaliding 1	...	...	534	167	25	44	...	14	51	109	17	...	22	7	3	20	7	5	7	58	3	8	34	39	1	18	67	62	...	28
26	{ Admissions 150 Deaths 1 Invaliding 1	...	...	22	2	3	5	4	9	14	29	2	...	2	...	...	...	4	...	...	6	...	...	4	7	...	...	14	20	...	3
27	{ Admissions 1,161 Deaths 1 Invaliding 1	...	1	415	35	25	60	1	19	40	111	6	...	4	19	5	6	12	4	3	45	3	...	58	72	5	21	84	78	...	29
28	{ Admissions 264 Deaths 1 Invaliding 1	...	...	103	7	5	8	...	5	11	25	1	...	3	...	...	2	1	...	1	9	1	1	11	6	...	5	27	27	...	5
29	{ Admissions (135) Deaths 1 Invaliding 1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
30	{ Admissions 932 Deaths 1 Invaliding 1	12	1	133	96	16	86	...	19	28	162	11	1	14	19	4	10	5	3	23	50	4	7	76	22	1	9	53	49	...	18
31	{ Admissions 232 Deaths 1 Invaliding 1	7	1	62	10	4	7	...	4	6	18	5	...	5	3	...	2	2	1	2	6	1	5	8	14	...	3	13	35	...	8
	{ Admissions 12,330 Deaths 131 Invaliding 130	32	6	2865	1001	238	662	18	280	525	1480	218	3	182	114	77	202	118	40	120	609	52	43	554	519	23	147	966	935	1	301

TABLE

3.—REGIMENTS of

REGIMENTS & BATTERIES, & STATION OF 1868.				Year of Arrival in the Bengal Presidency.	Date of Arrival from Station previously occupied.	Average Strength during 1867.	Admission-rate of 1868, per cent. of Average Strength.	Loss per 1,000.	
								By Death.	By Invaliding.
1	21st Hussars, Umballa	...	...	e	November 1863, from Muttra	341	216.71	11.73	55.72
2	106th Regiment, Umballa	...	...	1867b	April 1868, from Meean Meer	765	156.21	10.46	45.75
3	F. Brigade, A. Battery, R. H. Art., Umballa	...	...	...	March 1864, from Rawulpindee	132	163.4	2.57	60.61
4	F. Brigade, E. Battery, R. H. Art., Umballa	...	...	...	April 1868, from Peshawur	132	121.27	30.50	106.06
5	92nd Regiment, Jullundur (9 months)	...	...	1868a	March 30, 1868, from England	783	187.10	10.59	16.60
6	XIX Brigade, G. Battery, R. Art., Jullundur	...	...	...	January 1868, from Peshawur	135	68.15	11.82	7.41
7	1-5th Regiment, Ferozepore	...	...	1867a	February 1867, from England	818	114.22	12.33	24.23
8	XXII Brigade, B. Battery, R. Art., Ferozepore	...	...	...	January 1868, from Jhansi	120	226.67	...	51.67
9	XXIV Brigade, 6 Battery, R. Art., Govindghur	...	...	...	April 1865, from Mooltan	67	...	...	20.75
10	85th Regiment, Meean Meer (9 months)	...	...	1868a	April 5, 1868, from England	782	156.19	2.43	15.55
11	F. Brigade, F. Battery, R. H. Art., Meean Meer	...	...	...	March 1868, from Peshawur	130	226.68	...	61.77
12	XIX Brigade, F. Battery, R. Art., Meean Meer	...	...	...	March 1864, from Rawulpindee	130	121.27	11.74	23.68
13	XXII Brigade, 6 Battery, R. Art., Meean Meer	...	...	...	...	58	122.75	...	17.21
14	XXIV Brigade, 2 Battery, R. Art., Meean Meer	...	...	...	March 1864, from Peshawur	71	115.68	...	28.97
15	7th Hussars, Sealkote	...	...	1857a	December 1864, from Campbellpore	401	120.78	12.17	27.43
16	36th Regiment, Sealkote and Huzara Field Force	...	...	1857a	November 1866, from Subathoo	900	151.70	11.11	36.67
17	F. Brigade, B. Battery, R. H. Art., Sealkote	...	...	...	January 1866, from Peshawur	117	117.55	17.09	25.63
18	106th Regiment, Mooltan	...	...	1867b	December 1867, from Bombay Presidency	707	131.34	11.11	39.60
19	XIX Brigade, D. Battery, Mooltan	...	...	...	December 1864, from Rawulpindee	133	81.96	22.56	15.01
20	XXIV Brigade, 1 Battery, Mooltan	...	...	...	March 1865, from Govindghur	69	81.16	20.00	...
21	1-6th Regiment, Rawulpindee (10 months)	...	...	1868a	March 13, 1868, from England	782	156.13	24.30	7.67
22	1-19th Regiment, Rawulpindee	...	...	1857a	February 1868, from Nowshera	804	87.44	12.44	37.81
23	F. Brigade, D. Battery, Rawulpindee	...	...	...	April 1866, from Peshawur	134	121.63	...	11.93
24	XIX Brigade, E. Battery, Rawulpindee	...	...	...	April 1868, from Peshawur	135	228.89	7.41	140.74

(a) From England.

(b) From Bombay Presidency.

(c) Reorganised from local Regiments.

the PUNJAB.

CAUSES OF ADMISSIONS INTO HOSPITAL, OF DEATHS IN AND OUT OF HOSPITAL, AND OF THE INVALIDING OF 1868.																															
Total Admissions and Loss of the Year by Death and Invaliding.			Cholera.	Smallpox.	Intermittent Fever.	Remittent and Continued Fevers.	Dysentery.	Diarrhoea.	Erysipelas.	Ophthalmia.	Rheumatism and Rheumatic Affections.	Primary Venereal Affections.	Secondary Venereal Affections.	Scurvy.	Anæmia and Debility.	Phthisis Pulmonalis and Hemoptysis.	Apoplexy, Epilepsy, and Brain Affections.	Neuralgic Affections.	Drunkenness.	Delirium Tremens.	Heart Disease and Anæmia.	Tonsillitis, Bronchitis, and Asthma.	Pleurisy and Pneumonia.	Spleen Disease.	Hepatitis.	Functional Derangements of the Digestive System.	Diseases of the Urinary System.	Diseases of the Generative System.	Abscess and Ulcer.	Injuries and Accidents. Punished.	All other Causes.
1	{ Admissions 308 Deaths 79 Invaliding 10	...	...	181	2	1	3	...	6	23	16	7	...	5	...	...	5	7	2	5	34	2	4	14	19	...	3	16	64	...	9
2	{ Admissions 1,195 Deaths 10 Invaliding 2	1	1	481	83	10	52	1	35	68	71	21	1	9	2	9	25	11	2	1	13	...	5	15	38	1	16	78	80	...	35
3	{ Admissions 218 Deaths 1 Invaliding 1	...	...	70	8	...	5	...	4	22	17	6	...	1	1	1	11	...	1	2	0	2	2	6	8	3	...	16	17	...	6
4	{ Admissions 300 Deaths 1 Invaliding 1	...	...	139	34	3	16	...	...	11	13	3	...	2	1	...	1	...	...	...	8	...	6	13	2	...	...	21	20	...	7
5	{ Admissions 1,465 Deaths 1 Invaliding 1	...	...	469	282	31	124	...	25	44	87	10	...	18	11	13	35	11	3	1	73	10	...	25	29	1	7	69	42	...	26
6	{ Admissions 92 Deaths 1 Invaliding 1	...	...	8	5	4	2	...	...	6	12	...	...	1	...	...	4	4	4	...	2	1	...	9	4	...	2	13	8	...	3
7	{ Admissions 936 Deaths 1 Invaliding 1	...	...	30	260	23	35	1	11	28	92	11	...	4	10	9	32	19	2	12	57	5	1	13	47	2	14	71	89	...	58
8	{ Admissions 392 Deaths 1 Invaliding 1	...	...	116	24	2	18	...	0	8	43	1	...	6	1	2	3	6	1	...	25	1	4	14	19	1	4	45	34	...	5
9	{ Admissions 59 Deaths 1 Invaliding 1	...	...	16	...	...	4	...	3	1	5	3	...	...	2	...	1	2	...	...	1	1	...	4	4	...	...	5	4	...	3
10	{ Admissions 1,510 Deaths 1 Invaliding 1	...	...	465	166	28	96	3	15	13	54	36	...	12	3	26	188	5	1	2	107	1	1	18	38	1	3	96	41	...	51
11	{ Admissions 377 Deaths 1 Invaliding 1	...	...	189	15	...	16	...	7	12	6	2	1	5	...	7	5	...	...	...	24	...	2	15	4	...	3	25	30	...	9
12	{ Admissions 170 Deaths 1 Invaliding 1	...	...	26	14	3	12	...	2	10	16	2	...	2	7	1	2	3	1	...	10	1	1	17	2	3	3	14	16	...	2
13	{ Admissions 106 Deaths 1 Invaliding 1	...	...	36	10	1	4	...	1	1	13	1	...	...	...	...	3	2	...	1	3	...	...	...	2	...	3	13	8	...	4
14	{ Admissions 80 Deaths 1 Invaliding 1	...	...	27	...	3	9	...	1	3	6	...	...	...	3	...	2	2	...	...	4	...	...	...	4	...	...	8	8	...	...
15	{ Admissions 360 Deaths 1 Invaliding 1	...	...	11	57	4	15	...	7	10	13	15	...	1	1	5	29	4	2	...	32	2	...	12	29	...	5	48	50	...	9
16	{ Admissions 1,364 Deaths 1 Invaliding 1	...	...	425	9	32	79	...	41	72	134	11	...	17	2	61	31	2	1	27	85	4	4	33	65	3	18	95	92	...	31
17	{ Admissions 138 Deaths 1 Invaliding 1	...	...	18	3	5	11	...	2	2	5	3	...	...	...	...	5	...	...	1	9	...	2	6	8	1	1	26	23	...	7
18	{ Admissions 930 Deaths 1 Invaliding 1	...	...	148	65	10	19	...	45	37	106	28	12	20	3	9	47	20	5	3	48	3	...	13	70	4	9	100	64	...	42
19	{ Admissions 113 Deaths 1 Invaliding 1	...	...	4	20	1	7	...	2	1	24	...	...	...	1	2	1	3	...	...	7	1	...	7	5	...	2	5	15	...	5
20	{ Admissions 56 Deaths 1 Invaliding 1	...	...	1	11	...	2	1	1	1	13	...	...	...	1	...	2	...	...	...	4	...	...	1	3	...	...	9	2	...	4
21	{ Admissions 1,174 Deaths 1 Invaliding 1	...	...	101	407	40	82	5	21	50	161	10	2	8	1	48	8	3	1	4	86	10	1	8	18	3	5	57	24	...	20
22	{ Admissions 703 Deaths 1 Invaliding 1	...	...	251	4	25	62	...	15	52	67	6	...	8	2	2	2	4	...	4	39	1	...	23	13	3	7	62	54	...	7
23	{ Admissions 167 Deaths 1 Invaliding 1	...	...	26	3	...	6	...	...	11	18	5	1	3	1	...	1	2	...	...	7	2	...	5	19	...	3	17	26	...	11
24	{ Admissions 309 Deaths 1 Invaliding 1	...	...	172	2	5	20	...	5	12	17	3	...	6	1	1	...	2	...	2	4	...	1	5	6	3	2	13	19	...	8

TABLE

REGIMENTS of the									
REGIMENTS & BATTERIES, & STATION OF 1868.				Year of Arrival in the Bengal Presidency.	Date of Arrival from Station previously occupied.	Average Strength during 1868.	Absorption rate of 1868, Per cent of Average Strength.	LOSS PER 1,000.	
								By Death	By Invaliding
25	20th Hussars, Campbellpore and Sydn Bowlee	...	...	8	December 1864, from Sealkote	428	86.15	14.91	10.37
26	XXV Brigade, 4 Battery, R. Art., Attock	...	...	...	January 1865, from Allahabad	63	100.00		47.62
27	77th Regiment, Nowshera	...	...	1858a	January 1868, from Peshawur	752	100.00	1.61	4.88
28	36th Regiment, Peshawur	...	...	1864a	{ January 1868, from Shahjehanpore and } Moradabad	727	100.00	1.00	32.27
29	88th Regiment, Peshawur	...	...	1857a	November 1867, from Rawul Pindee	737	100.00	1.23	33.64
30	A. Brigade, B. Battery, R. H. Art., Peshawur	...	...	1866a	March 1868, from Meean Meer	132	100.00	1.57	51.00
31	A. Brigade, E. Battery, R. H. Art., Peshawur	...	...	1865a	March 1868, from Umballa	135	100.00	1.44	50.37
32	XIX Brigade, D. Battery, R. Art., Peshawur	...	...	...	February 1868, from Rawul Pindee	140	100.00	1.43	78.57
33	XXII Brigade, 4 Battery, R. Art., Peshawur	...	...	...	January 1866, from Meerut	72	100.00	1.39	102.18
REGIMENTS OF THE PUNJAB						11,349	100.00	1.47	38.1
4.—REGIMENTS cantoned during									
1	XXV Brig., 1 Battery, R. Art., Darjeeling	...	...	...	April 1868, from Saugor	62	100.00	10.33	64.72
2	58th Regiment, Head Quarters, Darjeeling	...	...	1865a	January 1868, from Benares	403	100.00		32.30
3	104th Regiment, Dugshaie	...	...	...	April 1867, from Jhansi	835	100.00	4.05	39.46
4	90th Regiment, Subathoo (11 months)	...	...	1857a	March 1867, from Nowshera	654	100.00	3.7	16.29
HILL STATIONS OF THE BENGAL PRESIDENCY						1,900	100.00	3.00	51.08
5.—DEPOTS and									
1	Chinsurah Depôt	...	...	...	...	304	100.00		
2	Chunar Invalid Garrison	...	...	...	...	51	100.00	100.00	
3	Deaths in Kurrachee Depôt of men belonging to Bengal Regiments*	...	...	...	...	...	...	...	...

(a) From England.

(b) Re-organized from local Regiments.

* These deaths, chiefly of Recruits who never joined their Regiments, are excluded from the Regimental deaths in this Table.

PUNJAB,—continued.

			CAUSES OF ADMISSIONS INTO HOSPITAL, OF DEATHS IN AND OUT OF HOSPITAL, AND OF THE INVALIDING OF 1868.																															
Total Admissions and Loss of the Year by Death and Invaliding.			Cholera.	Smallpox.	Intermittent Fever.	Remittent and Continued Fever.	Dysentery.	Diarrhoea.	Erysipelas.	Ophthalmia.	Rheumatism and Rheumatic Affections.	Primary Venereal Affections.	Secondary Venereal Affections.	Scurvy.	Anæmia and Debility.	Phthisis Pulmonalis and Hemoptysis.	Apoplexy, Epilepsy, and Brain Affections.	Neuralgic Affections.	Drunkenness.	Delirium Tremens.	Heart disease and Aneurism.	Tonsillitis, Bronchitis, and Asthma.	Pleurisy and Pneumonia.	Spleen Disease.	Hepatitis.	Functional derangements of the Digestive System.	Diseases of the Urinary System.	Diseases of the Generative System.	Abscess and Ulcer.	Injuries and Accidents.	Punished.	All other Causes.		
25	{ Admissions	370	...	...	62	26	7	20	2	6	13	54	9	...	3	1	2	4	13	4	...	17	4	...	14	22	1	9	25	48	...	4	
	{ Deaths	6	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	{ Invaliding	13	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
26	{ Admissions	104	...	...	7	11	8	7	...	3	4	19	2	...	1	4	...	2	...	...	1	3	...	...	5	3	...	...	8	4	...	12	
	{ Deaths	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	{ Invaliding	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
27	{ Admissions	1,169	...	...	655	13	31	37	1	3	31	74	15	...	23	10	2	8	14	...	...	18	5	9	28	24	1	9	52	53	...	53	
	{ Deaths	6	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	{ Invaliding	35	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
28	{ Admissions	1,387	...	1	50	545	23	72	...	6	37	216	15	...	12	13	9	14	3	2	5	55	5	5	35	88	7	12	49	66	...	42		
	{ Deaths	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	{ Invaliding	38	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
29	{ Admissions	1,177	...	...	377	345	12	25	1	16	24	110	12	...	7	4	1	1	8	2	1	36	4	2	33	16	6	11	41	59	...	23	
	{ Deaths	10	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	{ Invaliding	11	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
30	{ Admissions	256	...	...	70	77	3	28	...	2	8	9	1	...	1	...	...	1	...	...	3	3	2	2	4	21	...	1	11	7	...	...
	{ Deaths	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	{ Invaliding	8	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
31	{ Admissions	291	...	...	145	54	...	28	...	5	1	8	2	...	4	1	1	1	...	...	1	2	...	4	4	4	...	1	13	9	...	3	
	{ Deaths	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	{ Invaliding	7	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
32	{ Admissions	262	...	...	87	39	3	6	...	...	12	27	...	...	1	5	...	8	4	2	...	6	...	...	15	8	...	1	15	17	...	6	
	{ Deaths	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	{ Invaliding	11	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
33	{ Admissions	197	...	...	121	13	...	12	...	1	2	9	...	...	5	4	...	...	1	...	...	3	...	1	4	7	...	...	5	9	...	...
	{ Deaths	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	{ Invaliding	11	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
{ Admissions 17,825			1	2	4,984	2807	318	334	15	300	630	1525	240	17	185	96	200	482	155	36	76	684	67	57	418	619	44	154	1151	1102	...	506		
{ Deaths		
{ Invaliding		

the year at HILL STATIONS.

1	Admissions	141	2	...	79	1	...	14	...	1	2	10	1	...	2	...	...	2	...	...	...	1	1	...	4	3	...	2	8	6	...	2
	Deaths	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Invaliding	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
2	Admissions	352	...	...	30	12	5	5	...	2	26	26	12	...	1	...	...	14	2	2	2	45	...	8	15	22	5	6	15	73	...	24
	Deaths	None	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Invaliding	13	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
3	Admissions	541	...	1	88	5	25	38	1	5	20	50	9	...	4	1	2	9	4	1	13	19	7	2	25	25	1	9	41	89	...	49
	Deaths	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Invaliding	13	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
4	Admissions	502	...	3	87	5	11	41	...	11	33	77	2	...	1	2	1	10	1	...	3	30	12	16	30	14	1	3	25	46	...	37
	Deaths	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Invaliding	27	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
{ Admissions 1,536			2	4	284	23	41	68	1	19	81	163	24	...	8	3	3	35	7	3	18	85	20	26	74	64	7	20	89	213	...	111
{ Deaths			...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
{ Invaliding			...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...

INVALID GARRISON.

1	Admissions	973	21	...	30	70	13	237	2	24	41	86	32	2	32	23	12	40	18	2	10	72	4	...	33	38	2	6	50	46	...	37
	Deaths	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
2	Admissions	36	...	...	3	...	...	...	...	...	2	2	1	...	1	...	2	...	3	9	...	...	3	...	3	...	...	...	2	4	...	1
	Deaths	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
3	Deaths	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...

* At Chinsurah.

† Four only of these deaths occurred at Dugshaie.

TABLE

6.—CONVALESCENT

CONVALESCENT DEPOTS.					Period of Occupation.		Average Strength during the period of occupation.	Deaths during the period of occupation.	By Deaths.	By Inwarding.
1	Darjeeling ...	...	...	...	Occupied from April to December	...	105	1,121	...	...
2	Nynce Tal ...	...	...	...	Occupied from April to November	...	337	1,177	...	...
3	Landour ...	...	...	...	Occupied from April to October	...	206	1,177	...	...
4	Kussowlie ...	...	...	...	Occupied from April to November	...	390	1,177	...	...
5	Dhurmsalla ...	...	...	...	Occupied from April to October	...	109	1,177	...	...
6	Family Camp near Murree	...	...	...	Occupied from June to October	...	78	1,177	...	...
7	Murree ...	...	...	...	Occupied from May to October	...	284	1,177	...	...
CONVALESCENT DEPOTS OF THE BENGAL PRESIDENCY							1,499	...	...	...
EUROPEAN ARMY OF THE BENGAL PRESIDENCY							32,234*	...	...	...

* The Strength taken from the Regimental Annual Returns exceeds the Strength shown in the General Tables by 674; this excess represents the Strength of the Bombay Depôts as in the General Tables; they are not calculated on the

† For details of Admissions see the Summary

‡ The Total shown in Table I. is 635 deaths; the deaths wanting occurred in Regiments present

ANNUAL RELIEF OF

ROYAL ARTILLERY.

16th Brigade	A. Battery	From Hazareebaugh	To Barrackpore	...	Arrived	January	1869.
	D. Battery	" Barrackpore	" Allahabad	...	Arrived	January	1869.
22nd Brigade	A. Battery	" Allahabad	" Jutogh, Simla	...	Arrived	March	1869.
	3. Battery	" Lucknow	" Fort William	...	Arrived	November	1868.
	6. Battery	" Meeran Meer	" Saugor	...	Arrived	January	1869.
24th Brigade	2. Battery	" Meeran Meer	" Morar	...	Arrived	February	1869.
	3. Battery	" Meerut	" Lucknow	...	Arrived	January	1869.
	5. Battery	" Morar	" Meeran Meer	...	Arrived	April	1869.
25th Brigade	3. Battery	" Fort William	" Morar	...	Arrived	December	1868.
	5. Battery	" Abyssinia	" Abbottabad	...	Arrived	April	1869.

INFANTRY REGIMENTS.

1-3rd Regiment	From Meerut	To Dugshale	...	Arrived	April	1869.
1-14th Regiment	" England	" Cawnpore	...	Arrived	December	1868.
2-25th Regiment	" Shahjehanpore & Berhampore	" Bareilly	...	Arrived	November	1868.
26th Regiment	" Dum-Dum	" Fort William	...	Arrived	January	1869.

DEPOTS.

		• CAUSES OF ADMISSIONS INTO HOSPITAL, OF DEATHS IN AND OUT OF HOSPITAL, AND OF THE INVALIDING OF 1868.																														
Total Admissions, and Loss of the Year by Death and Invaliding.		Cholera.	Smallpox.	Intermittent Fever.	Remittent and Continued Fever.	Dysentery.	Diarrhoea.	Erysipelas.	Ophthalmia.	Rheumatism and Rheumatic Affections.	Primary Venereal Affections.	Secondary Venereal Affections.	Scurvy.	Anæmia and Debility.	Phthisis Pulmonalis and Hemoptysis.	Apoplexy, Epilepsy and Brain Affections.	Neuralgic Affections.	Drunkenness.	Delirium Tremens.	Heart Disease and Aneurysm.	Tonsillitis, Bronchitis, and Asthma.	Pleurisy and Pneumonia.	Spleen Disease.	Hepatitis.	Functional Derangements of the Digestive System.	Diseases of the Urinary System.	Diseases of the Generative System.	Abscess and Ulcer.	Injuries and Accidents.	Punished.	All other Causes.	
1	{ Admissions 142	...	...	13	...	7	6	...	3	16	11	4	...	7	1	1	12	1	...	3	9	2	2	8	7	...	4	3	10	...	12
2	{ Admissions 671	...	...	100	1	22	18	...	6	37	59	37	...	30	14	3	14	3	...	14	24	2	6	119	63	1	13	32	32	...	24
3	{ Admissions 210	...	...	61	3	5	22	...	4	24	5	5	...	...	2	1	6	3	...	...	27	...	2	12	39	...	1	8	14	...	5
4	{ Admissions 369	...	...	83	2	14	17	...	13	34	26	23	...	29	8	7	9	...	1	4	14	...	1	12	18	...	3	20	11	...	19
5	{ Admissions 123	...	...	38	1	7	3	...	...	6	4	22	...	...	1	...	7	3	1	...	2	1	1	12	5	2	1	1	1	...	4
6	{ Admissions 79	...	...	13	8	...	7	...	1	2	...	...	...	6	...	...	1	...	...	1	...	...	1	7	23	...	...	4	1	...	1
7	{ Admissions 367	...	...	160	29	4	21	...	...	12	42	8	...	16	3	2	4	2	...	2	4	1	2	14	8	...	5	6	17	...	5
	{ Admissions 2,002	...	...	408	44	59	94	...	27	131	147	99	...	89	29	14	53	12	2	24	90	6	15	184	163	3	27	74	86	...	73
{ Admissions +14,943		78	16	10018	1619	1109	2511	42	818	1789	5318	810	24	680	296	404	983	762	138	327	2053	183	153	1578	1866	106	482	3296	3238	1	1291	

at Kurrachee and Nassick, which are not included in the General Tables, and which furnish no Returns to the Bengal Presidency. The ratios in the Total are the same aggregate of the Regimental Strengths here exhibited, which concludes the Tables of the Year.

in the Bengal Presidency for short periods, of which the statistics are not shown in Table XVI.

THE ARMY, 1868-69.

INFANTRY REGIMENTS,—continued.

37th Regiment	From Bareilly	To Shahjehanpore and Moradabad	... Arrived	November 1868.
41st Regiment	" Agra	" Subathoo	... Arrived	February 1869.
55th Regiment	" Lucknow	" Chuckrata & Rae Bareilly	Arrived	May 1869.
58th Regiment	" Darjeeling & Benares	" Allahabad	... Arrived	January 1869.
2-80th Regiment	" Fort William	" Seetapore & Benares	... Arrived	January 1869.
62nd Regiment	" England	" Lucknow	... Arrived	February 1869.
77th Regiment	" Nowshera	" Agra	... Arrived	February 1869.
88th Regiment	" Peshawur	" Nowshera	... Arrived	December 1868.
90th Regiment	" Subathoo	" Kamptee	... Arrived	January 1869.
96th Regiment	" England	" Dum-Dum & Barrackpore	Arrived	February 1869.
101st Regiment	" Cawnpore & Futtehghur	" England vid Bombay	... Marched	November 1868.
104th Regiment	" Dugshale	" Peshawur	... Arrived	December 1868.
106th Regiment	" Dinapore	" Meerut & Futtehghur	... Arrived	January 1869.
107th Regiment	" Allahabad	" Hazareebaugh	... Arrived	January 1869.
3rd Bat., Rifle Brig.	" Seetapore & Moradabad	" Dinapore and Chunar	... Arrived	January 1869.

EUROPEAN TROOPS, 1868.

XVII.

TABLE showing the SICKNESS and MORTALITY among the WOMEN of the EUROPEAN REGIMENTS serving in the BENGAL PRESIDENCY during the Year 1868, and the prevalence of the principal Diseases in each Month of the Year.

MONTHS.	Average Strength.	Number of Deaths in each Month.	Death-rate of each Month per 1,000 of Strength.	CAUSES OF DEATHS.													
				Cholera.	Smallpox.	Fever, Intermittent.	Fever, Remittent and Continued.	Heat Apoplexy.	Dysentery.	Diarrhoea.	Hepatitis.	Phthisis Pulmonalis.	Respiratory Diseases.	Heart Disease.	Atrophy and Anæmia.	Childbirth and Abortion.	All other Causes.
January	2,804	4	1.54	...	...	...	...	...	...	2	1	...	...	...	...	1	...
February	2,797	1	.36	...	...	...	...	...	1	...	1	...	...	...	...	...	...
March	3,030	7	2.31	1	...	...	...	...	1	...	...	2	...	...	...	1	2
April	3,276	7	2.14	1	...	...	1	...	2	...	1	...	...	...	...	...	...
May	3,343	12	3.58	3	...	...	3	...	...	...	...	...	...	...	...	...	4
June	3,300	17	5.15	2	...	...	4	5	1	1	1	1	...	...	...	1	1
July	3,371	7	2.08	...	...	...	3	...	1	...	...	2	1	...	...	...	...
August	3,358	9	2.68	1	...	...	2	...	1	...	2	...	...	...	...	2	1
September	3,347	12	3.58	1	...	...	1	1	1	...	3	2	...	1	...	1	1
October	3,292	10	3.04	...	...	...	...	...	4	2	...	2	...	...	...	...	2
November	3,310	8	2.42	...	...	1	1	...	2	...	...	...	...	1	1	2	...
December	3,318	7	2.11	...	...	1	...	...	1	1	...	1	...	...	...	2	1
				9	...	2	15	6	14	6	9	14	1	2	1	10	12
Died per 1,000 of Strength.																	
For the Year	3,196	101	31.00	2.82	...	.62	4.60	1.88	4.38	1.88	2.82	4.38	.31	.62	.31	3.13	3.76

CAUSES OF ADMISSIONS.	NUMBER OF ADMISSIONS INTO HOSPITAL IN EACH MONTH.												Total admitted during the Year.	Admitted per cent. of Strength.	Died per cent. of Admissions.
	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sep.	Oct.	Nov.	Dec.			
Cholera	...	...	1	1	3	3	...	2	1	...	...	...	11	.34	81.82
Smallpox	...	...	...	...	...	1	...	...	...	...	...	1	2	.06	...
Fever, Intermittent	34	15	26	36	58	85	108	79	68	64	63	56	692	21.65	...
Fever, Remittent and Continued	5	6	8	26	63	90	40	36	30	11	16	10	359	11.23	1.62
Heat Apoplexy	...	...	...	...	...	7	...	...	1	...	...	...	8	.25	75.00
Dysentery	3	3	7	16	10	17	14	15	23	15	10	17	150	4.70	9.33
Diarrhoea	5	3	8	29	37	27	24	40	24	27	19	14	261	8.17	2.30
Hepatitis	4	3	5	1	11	13	14	8	6	7	2	4	78	2.44	11.54
Spleen Disease	1	...	...	...	...	1	...	...	...	...	...	...	2	.08	...
Respiratory Diseases	3	8	3	10	9	10	11	9	12	7	8	8	98	3.07	1.09
Phthisis Pulmonalis	3	...	4	2	6	5	3	4	3	1	1	3	35	1.09	40.00
Anæmia and Debility	7	3	22	20	20	47	40	40	67	23	32	22	362	11.01	.28
Rheumatism	3	3	3	9	3	5	8	2	5	2	1	6	50	1.56	...
Eye Diseases	5	4	...	14	39	26	53	32	64	20	10	2	274	8.59	...
Childbirth	44	52	79	77	44	69	69	76	91	68	72	74	815	25.50	1.23
Abortion	3	2	3	3	4	7	7	7	11	9	3	7	68	2.08	...
Diseases peculiar to Women	2	9	7	14	18	14	13	5	9	6	6	6	109	3.41	None.
Abscess and Ulcer	4	6	6	7	7	10	13	11	11	9	3	4	91	2.85	...
Injuries	3	4	8	5	6	7	3	3	11	4	2	4	60	1.88	...
All other Causes	18	10	21	31	42	63	38	33	45	26	23	27	377	11.80	2.65
	147	131	216	301	389	516	471	402	482	299	271	265	3,890		
Admitted per cent. of the Average Strength in each Month.															
	5.64	4.68	7.13	9.19	11.64	15.64	13.97	11.97	14.40	9.09	8.19	8.00		121.71	

EUROPEAN TROOPS, 1868.

XVIII.

TABLE showing the SICKNESS and MORTALITY among the CHILDREN of the EUROPEAN REGIMENTS serving in the BENGAL PRESIDENCY during the Year 1868, and the prevalence of the principal Diseases in each Month of the Year.

MONTHS.	Average Strength.	Number of Deaths in each Month.	Death-rate of each Month per 1,000 of Strength.	CAUSES OF DEATHS.																	
				Cholera.	Smallpox.	Measles.	Whooping Cough.	Fever, Intermittent.	Fever, Remittent and Continued.	Heat Apoplexy.	Dentition.	Convulsion.	Meningitis and Hydrocephalus.	Tuberc Mesenterica.	Phthisis Pulmonalis.	Dysentery.	Diarrhoea.	Anemia and Atrophy.	Bronchitis and Pneumonia.	Croup and Laryngitis.	All other Causes.
January ...	4,253	9	2.12	...	...	...	...	1	...	1	...	...	...	1	3	1	...	...	1	1
February ...	4,336	17	3.92	...	...	...	...	1	...	1	...	4	1	...	...	1	1	...	2	2
March ...	4,445	19	3.92	...	...	2	...	...	...	...	4	2	...	...	...	...	...	1	1	1
April ...	5,117	47	9.19	...	...	2	3	2	3	...	4	9	1	2	...	1	12	5	2	...
May ...	5,173	52	10.05	2	...	...	1	...	1	...	10	16	1	1	...	...	11	5	3	...
June ...	5,167	85	16.45	7	...	1	2	2	10	1	7	7	8	4	1	1	25	8	1	...	
July ...	5,243	60	11.44	1	1	2	1	3	10	...	1	9	3	...	1	3	6	10	1	2	
August ...	5,298	41	7.76	1	...	...	1	3	2	...	7	5	4	1	...	2	5	6	12	...
September ...	5,335	37	6.93	...	...	1	...	2	3	...	4	2	2	2	...	1	14	3	1	1
October ...	5,333	20	3.75	2	...	...	...	1	3	...	2	3	1	...	...	3	2	2	...	...
November ...	5,292	26	4.91	...	...	...	...	2	2	...	1	9	1	...	...	1	2	3	...	4
December ...	5,236	25	4.78	...	1	1	...	2	4	...	...	5	...	2	...	1	2	3	2	1
				13	2	9	8	16	41	1	38	73	24	14	2	14	89	47	16	11	20
Died per 1,000 of Strength.																					
For the Year ...	5,052	438	86.70	2.67	.40	1.78	1.59	3.16	8.12	.20	7.52	14.45	4.75	2.77	.40	2.77	17.62	9.30	3.16	2.18	3.96

CAUSES OF ADMISSIONS.	NUMBER OF ADMISSIONS INTO HOSPITAL IN EACH MONTH.												Total Admitted during the Year.	Admitted per cent. of Strength.	Died per cent. of Admissions.
	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.			
Cholera ...	...	...	...	...	2	8	1	1	...	2	...	...	14	.29	92.96
Smallpox ...	...	...	...	...	...	...	1	...	...	...	...	4	5	.10	46.00
Measles ...	50	15	16	33	35	45	13	...	2	1	20	18	254	5.03	3.54
Whooping Cough ...	5	13	4	14	16	14	9	16	10	5	6	4	120	2.38	0.07
Fever, Intermittent ...	35	17	42	66	66	71	61	43	60	63	67	65	656	12.98	5.70
Fever, Remittent and Continued ...	6	8	19	21	44	71	59	35	39	13	15	14	344	6.81	...
Heat Apoplexy ...	...	...	...	1	...	2	...	2	...	...	...	...	5	.10	20.00
Dysentery ...	8	2	8	6	11	14	15	18	17	11	13	11	134	2.65	10.45
Diarrhoea ...	17	10	26	76	78	100	83	92	67	27	22	25	623	12.33	11.29
Hepatitis ...	...	...	...	...	...	1	1	...	...	...	1	...	3	.06	...
Spleen Disease ...	...	1	...	...	...	...	...	3	1	...	...	2	7	.14	...
Respiratory Diseases ...	6	12	16	15	20	26	20	11	39	23	18	22	224	4.51	11.84
Eye Diseases ...	8	11	14	58	133	134	72	113	181	46	24	8	809	16.01	...
Anemia and Debility ...	9	9	18	29	26	36	51	33	51	29	35	27	353	6.99	13.32
Tubercular Diseases ...	2	2	1	4	7	11	10	12	6	4	2	1	62	1.23	33.87
Meningitis and Hydrocephalus ...	...	1	3	3	4	6	3	4	3	1	1	...	29	.57	82.76
Convulsion ...	1	4	4	9	18	11	10	4	3	6	10	5	85	1.68	85.88
Dentition ...	2	8	12	22	28	28	12	18	21	20	7	7	185	3.66	20.54
Abscess and Ulcer ...	3	2	3	5	8	12	17	12	5	5	10	1	83	1.64	...
Injuries ...	7	1	2	11	7	6	2	2	5	7	8	11	66	1.37	...
All other Causes ...	5	7	9	13	19	32	28	18	15	15	14	1	176	3.49	6.10
	170	123	197	390	522	632	408	437	525	281	273	226	4,244		
Admitted per cent. of the Average Strength in each Month.															
	4.00	2.84	4.06	7.62	10.09	12.23	8.03	8.27	9.84	5.27	5.16	1.32		81.01	

EUROPEAN TROOPS, 1868.

XIX.

TABLE showing the DISTRIBUTION by STATIONS of the DEATHS of the WOMEN of EUROPEAN REGIMENTS.

STATIONS.	Average Strength for the period of Observation.	CAUSES OF DEATHS.													Total Deaths of the Year.	DIED PER 1,000 OF THE AVERAGE STRENGTH.		
		Cholera.	Smallpox.	Fever, Intermittent.	Fever, Remittent and Continued.	Heat Apoplexy.	Dysentery.	Diarrhea.	Hepatitis.	Phthisis Pulmonalis.	Respiratory Diseases.	Heart Disease.	Atrophy and Anæmia.	Childbirth and Abortion.	All other Causes.	A. Cholera.	B. All other Causes.	C. All Causes.
Chinsurah Depot	32	2	...	...	...	...	...	...	...	1	...	...	...	...	...	3	...	...
Fort William	102	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	9'80	9'80
Dum-Dum	52	...	...	...	2	...	1	...	...	...	...	...	...	...	...	3	57'60	57'60
Barrackpore	42	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Berhampore (9 months)	17	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	58'82	58'82
	200	1	...	...	2	...	1	...	...	...	...	...	...	1	...	5	4'78	23'92
Hazareebaugh	11	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Dinapore	95	...	...	...	...	...	...	...	...	1	...	...	...	...	1	2	21'05	21'05
Benares	75	...	...	...	...	...	3	...	...	...	...	...	...	1	...	4	53'33	53'33
Fyzabad	113	...	...	...	...	1	...	1	1	...	...	...	...	...	...	3	26'55	26'55
Lucknow	280	1	...	...	...	...	...	...	...	1	...	...	...	...	...	2	3'57	7'14
Seetapore (9 months)	50	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Futtehghur	18	...	...	...	...	...	...	...	...	...	...	...	1	...	...	1	55'56	55'56
Cawnpore	73	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1	13'70	13'70
Allahabad	95	...	...	...	1	...	...	...	...	1	...	...	...	...	2	4	42'11	42'11
	797	1	...	...	1	2	3	1	1	3	...	...	1	1	3	17	1'26	20'07
Shahjehanpore (9 months)	32	...	...	...	1	...	2	...	1	...	...	...	...	...	...	4	125'00	125'00
Bareilly	94	...	...	...	...	...	...	...	...	1	1	...	...	...	...	2	21'28	21'28
Roorkee	37	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Moradabad (10 months)	15	...	...	...	...	...	...	...	...	1	...	...	...	...	...	1	66'67	66'67
Meerut	202	...	...	...	3	...	2	...	1	...	...	...	...	...	2	8	39'60	39'60
Delhi	27	...	...	...	...	...	1	...	...	...	...	...	...	...	...	1	37'04	37'04
Muttra	65	...	...	...	...	1	...	...	...	...	...	...	...	...	1	2	30'77	30'77
	462	...	...	...	4	1	5	...	2	2	1	...	...	...	3	18	38'06	38'06
Agra	115	...	...	...	...	...	1	1	...	1	...	...	...	...	...	3	26'09	26'09
Morar	119	...	...	...	...	...	...	...	...	...	...	2	...	2	1	5	42'02	42'02
Seepree (10 months)	14	...	...	...	...	...	1	...	...	...	...	...	...	...	...	1	71'43	71'43
Jhansi	46	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Nowgong	15	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	66'67	66'67
Saugor	57	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	17'54	17'54
Jubbulpore	54	3	...	...	...	...	...	1	1	...	...	...	...	...	...	5	55'56	55'56
	416	4	...	...	...	...	2	2	1	1	...	2	...	2	2	16	9'62	28'84
Umballa	88	...	...	...	...	...	...	...	...	1	...	...	...	...	...	1	11'36	11'36
Phillour	8	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1	125'00	125'00
Jullundur (10 months)	90	...	...	...	1	1	...	...	...	1	...	...	...	2	...	5	55'56	55'56
Ferozepore	94	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Mooltan	87	...	...	...	1	...	...	1	...	2	...	...	...	1	1	6	68'97	68'97
Dera Ismael Khan	10	...	...	...	...	...	...	...	1	...	...	...	...	...	...	1	100'00	100'00
Sealkote	92	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Kangra	2	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...	...
Umritsur	5	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Fort Lahore	4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Meean Meer	117	...	...	...	...	2	1	...	...	1	...	...	...	1	...	5	42'74	42'74
Rawulpindee (10 months)	185	...	...	...	2	...	...	...	...	1	...	...	...	...	1	4	21'62	21'62
Campbellpore	27	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Attock	4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Nowshera	21*	...	...	...	1	...	...	...	...	...	...	...	...	...	1	1	95'23	95'23
Peshawur	154*	...	...	2	2	...	1	...	...	...	...	...	...	...	5	...	32'47	32'47
	947	...	...	2	8	3	2	1	2	5	...	...	...	5	3	31	32'73	32'73
Darjeeling	43	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Nynee Tal	22	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	45'45	45'45
Landour	16	...	...	...	...	...	1	...	...	...	...	...	...	...	...	1	62'50	62'50
Kussowlie (9 months)	42	...	...	...	...	...	...	...	1	...	...	...	...	...	...	1	23'81	23'81
Dugshaie	49	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	20'83	20'83
Subathoo	42	...	...	...	...	...	...	...	...	1	...	...	...	...	...	1	23'81	23'81
Dhurmanalla	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...
Murree (7 months)	30	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Family Camp near Murree (6 months)	85	...	...	...	...	...	...	...	2	...	...	...	...	1	3	...	35'29	35'29
	267	...	...	...	...	...	1	1	3	2	...	...	...	1	1	9	33'71	33'71
Troops on the march	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...	2	...	...
Bengal Presidency..	3,106	9	...	2	15	6	14	6	9	14	1	2	1	10	12	101	2'82	31'60

EUROPEAN TROOPS, 1868.

XXI.

DETAIL of the ADMISSIONS and DEATHS of the WOMEN and CHILDREN of EUROPEAN REGIMENTS.

WOMEN.					CHILDREN.				
AVERAGE STRENGTH, 3,196.					AVERAGE STRENGTH, 5,052.				
Admitted during the year	3,890.	Per cent. of Strength	121.71		Admitted during the year	4,244.	Per cent. of Strength	84.01	
Died	101.	Per 1,000 of Strength	31.60		Died	438.	Per 1,000 of Strength	86.70	
CAUSES OF ADMISSIONS AND DEATHS.	Admitted.	Died.	Admitted per cent. of Strength.	Died per 1,000 of Strength.	CAUSES OF ADMISSIONS AND DEATHS.	Admitted.	Died.	Admitted per cent. of Strength.	Died per 1,000 of Strength.
Variola	2	...	0.06	...	Variola	5	2	0.10	0.40
Morbili	6	...	...	...	Varicella	2	...	...	...
Tonsillitis	28	...	...	...	Morbili	254	9	6.03	1.78
Influenza	1	...	...	...	Scarlatina	3	...	...	...
Parotitis	1	...	...	...	Diphtheria	1	1	...	...
Pertussis	1	...	...	...	Tonsillitis	28	...	...	...
Febris, Intermittens	692	2	21.65	62	Influenza	11	...	...	...
" Remittens	112	10	...	...	Parotitis	7	2	...	...
" Continua	247	5	11.23	4.60	Cynanche Trachealis	7	4	...	...
Ophthalmia	274	...	8.58	...	Pertussis	120	8	2.38	1.59
Erysipelas	4	...	...	...	Febris Intermittens	656	16	12.98	...
Dysenteria	150	14	4.70	...	" Remittens et Continua	314	41	6.81	11.28
Diarrhoea	261	6	8.17	6.26	Ophthalmia	809	...	16.01	...
Cholera	11	0	3.4	2.82	Erysipelas	1	...	...	...
Rheumatismus	60	...	1.56	...	Dysenteria	134	14	14.98	20.39
Syphilis Primaria	1	...	...	...	Diarrhoea	623	89	28	2.57
" Secundaria	8	...	...	...	Cholera	14	13	...	...
Ebrietas	4	1	...	...	Rheumatismus	7	...	...	...
Scorbutus	2	...	...	...	Syphilis Secundaria	3	1	...	...
Aphtha	...	...	...	...	Scorbutus	2	...	...	...
Scabies	5	...	...	...	Aphtha	4	...	...	...
Vermes	8	...	...	...	Scabies	2	...	...	...
" Tenia	141	1	...	...	Vermes	7	...	...	...
Anæmia	4	...	...	...	" Tenia	25	...	...	...
Anasarca	2	2	...	...	Anæmia	136	12	...	...
Scirrhus	2	...	...	...	Serofula	22	4	...	...
Scrophula	2	...	...	...	Phthisis Pulmonalis	5	2	...	...
Phthisis Pulmonalis	34	14	1.09	4.39	Tuberculosus Mesenterica	29	14	1.23	3.96
Hæmoptysis	1	...	...	...	Abscessus Psoanus	2	...	...	...
Tuberculosus Mesenterica	1	...	...	...	Morbus Coxæ	5	...	...	...
Meningitis	1	1	...	...	Encephalitis	2	5	...	...
Insolatio	8	6	2.5	1.88	Meningitis	9	5	5.7	4.75
Paralysis	1	...	...	...	Hydrocephalus	18	14	...	...
Epilepsia	4	...	...	...	Insolatio	5	1	1.0	2.0
Mania	6	...	...	...	Paralysis	1	...	...	...
" Puerperal	1	...	...	...	Tetanus	2	2	...	...
Monomania	1	...	...	...	Epilepsia	2	...	...	...
Dementia	3	...	...	...	Convulsio	85	73	1.68	14.45
Delirium Tremens	1	...	...	...	Chorea	1	...	...	...
Hysteria	28	...	...	...	Dementia	1	...	...	...
Cephalæa	30	...	...	...	Cephalæa	1	...	...	...
Neuralgia	13	...	...	...	Otitis	7	...	...	...
Sciatica	1	...	...	...	Odontalgia	1	...	...	...
Otitis	5	...	...	...	Morbus Cordis	2	1	...	...
Odontalgia	1	...	...	...	Laryngitis	8	6	...	...
Morbus Cordis	7	2	2.2	6.2	Bronchitis	165	12	4.51	5.34
Bronchitis	59	...	...	...	Pneumonia	9	4	...	...
Pleuritis	5	...	...	...	Gastritis	3	...	...	...
Pneumonia	4	1	3.07	3.1	Enteritis	6	2	...	...
Asthma	1	...	...	...	Obstipatio	3	...	...	...
Ozæna	1	...	...	...	Hernia	1	...	...	...
Stomatitis	1	...	...	...	Dyspepsia	19	...	...	...
Gastritis	3	...	...	...	Colica	2	...	...	...
Enteritis	2	2	...	...	Hæmatemesia	1	1	...	...
Obstipatio	9	...	...	...	Hæmorrhoids	2	...	...	...
Dyspepsia	164	...	...	...	Splenitis	7	1	1.4	...
Colica	37	...	7.01	...	Hepatitis	3	1	0.8	...
Hæmatemesia	1	...	...	...	Icterus	4	...	...	...
Hæmorrhoids	13	...	...	...	Hæmaturia	1	...	...	...
Heus	1	1	...	...	Ischuria	2	...	...	...
Splenitis	2	...	0.6	...	Diuresis	1	...	...	...
Hepatitis	78	9	2.44	2.82	Ochritis	1	...	...	...
Icterus	4	...	...	...	Hydrocole	2	...	...	...
Ascites	1	...	...	...	Leucorrhœa	1	...	...	...
Nephritis	2	1	...	...	Dysmenorrhœa	1	...	...	...
Cystitis	2	1	...	...	Arthritis	2	...	...	...
Leucorrhœa	7	...	...	...	Synovitis	1	...	...	...
Menorrhagia	25	...	...	...	Caries	2	1	...	...
Dysmenorrhœa	4	...	...	...	Skin Diseases	38	...	...	...
Amenorrhœa	5	...	...	...	Phlegmon and Abscess	61	...	1.64	...
Parametria	19	...	...	...	Ulcus	22	...	...	...
Metritis	9	1	3.41	...	Dentition	185	38	3.66	7.52
Phlegmasia Dolens	1	...	...	...	Curvature of Spine	1	...	...	...
Ovarian Dropsy	2	...	...	...	Cyanosis	1	1	...	...
Prolapsus Uteri	7	...	...	...	Atrophy and Debility	217	35	6.99†	9.30
Cancer (Uterine)	1	...	...	...	Injuries	69	2	1.37	...
Childbirth	815	9	25.50	3.13	Cause not specified	...	1	...	...
Abortion	68	...	2.08	...					
Arthritis	1	...	...	...		
Synovitis	3	...	...	...		
Skin Diseases	6	...	...	...		
Phlegmon and Abscess	66	1	2.85	...					
Ulcus	25	...	...	...		
Debility	211	...	11.01	3.1					
Injuries	60	1	1.88	...					
Causes not specified	2	...	...	...		
Homicide	...	1	...	...			
Ratios for all causes not specially calculated	...	...	4.57	3.76	Ratios for all causes not specially calculated	...	...	3.49	3.17
	3,890	101	121.71	31.60		4,244	438	84.01	86.70

* Including Tonsillitis and Influenza.

† Including Anæmia.

‡ Including Group.

2. NATIVE ARMY, 1868.

The regimental strengths upon which the actual death-rate of the year is calculated are taken as at 1st April. The total very closely approximates to the average for the year. The total deaths, absent and present, amount to 744, and this number, with a strength of 45,844, represents a loss of 16·23 per 1,000. The deaths of men present with their regiments amounted to 444, giving a ratio of 10·89 per 1,000 in relation to a strength of 40,770 men, the average present during the year.

NATIVE TROOPS, 1868.

I.

TABLE showing the SICKNESS and MORTALITY among the NATIVE TROOPS serving in the BENGAL PRESIDENCY during the Year 1868, and the prevalence of the principal Diseases in each Month of the Year.

(This Statement is for the Regular Native Army only, and for men present from month to month with their Regiments. The deaths of men who died in the hospitals of other Regiments have not been included; these are reckoned among the deaths of men absent from their Regiments—See introductory note.)

MONTHS.						CAUSES OF DEATHS IN HOSPITAL.																	Died out of Hospital.		
						Cholera.	Smallpox.	Fever, Intermittent.	Fever, Remittent.	Fever, Continued.	Apoplexy.	Dysentery.	Diarrhoea.	Hepatitis.	Spleen Disease.	Respiratory Diseases.	Heart Diseases.	Phthisis Pulmonalis.	Dropsy.	Scurvy.	Atrophy and Anæmia.	Wounds and Accidents.	All other Causes.	Died out of Hospital.	
January	...	41,226	1,548	3.75	54	...	15	...	8	4	1	1	4	3	...	1	8	1	1	...	1	3	...	3	...
February	...	41,950	1,546	3.69	30	2	1	1	1	3	2	...	1	9	...	1	...	3	1	...	2	...
March	...	42,315	1,468	3.45	24	...	2	...	5	4	...	...	...	3	1	1	3	2	...	...	1	...	...	...
April	...	39,316	1,254	3.19	28	...	5	...	4	2	...	1	1	4	1	1	3	1	3	...	...	1	...	...
May	...	39,755	1,278	3.30	27	...	3	4	4	1	1	...	...	1	...	...	2	2	...	...	...	...	6	...
June	...	38,946	1,301	3.34	34	...	1	...	5	3	...	1	4	5	...	3	3	1	...	...	2	...	4	...
July	...	41,319	1,337	3.24	28	...	4	...	1	3	...	1	4	2	...	3	2	2	...	...	...	1	...	
August	...	40,434	1,521	3.76	30	...	5	...	2	4	1	...	2	4	...	1	1	2	1	...	2	1	...	...
September	...	40,099	1,599	3.99	37	...	1	...	4	3	1	1	8	1	1	1	...	1	...	3	...	...	5	...
October	...	40,124	1,768	4.41	38	...	3	...	3	3	...	...	3	2	1	1	2	1	1	...	5	...	8	...
November	...	41,916	2,039	4.86	47	...	2	...	7	4	1	...	5	5	2	2	9	1	2	...	3	1	...	3	...
December	...	42,943	1,968	4.56	67	...	4	1	9	4	...	...	9	5	1	11	1	3	1	3	8	...	4	3
						45	5	55	36	6	7	43	37	7	9	55	9	21	4	8	30	7	45	15	
Died per 1,000 of the Average Strength.																									
For the year	...	40,770	1,543	3.78	444	10.89	1.10	.12	2.39		.17	1.06	.91	.17	.22	1.35	.22	.53	.10	.19	.74	.17	1.10	.37	

Absent deaths 300. Ratio of 744 deaths, 16.23 per 1,000 of Total Regimental Strength.

CAUSES OF ADMISSIONS.	NUMBER OF ADMISSIONS INTO HOSPITAL IN EACH MONTH.												Total admitted during the Year.	Admitted per cent. of Strength.	Died per cent. of Admissions.
	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.			
Cholera	24	2	4	14	5	12	9	7	4	3	2	7	93	.23	46.39
Smallpox	5	3	6	12	8	1	...	...	2	...	1	7	45	.11	11.11
Fever, Intermittent	1,173	1,067	1,235	1,082	1,377	1,814	1,472	1,809	2,591	2,666	2,742	2,063	21,091	51.73	.36
Fever, Remittent and Continued...	17	32	31	18	24	32	43	43	40	44	29	55	417	1.02	10.07
Apoplexy	1	1	...	1	1	3	...	1	2	...	...	2	12	.03	56.33
Dysentery	267	210	209	177	187	208	177	236	308	348	340	340	3,007	7.38	
Diarrhoea	141	100	144	128	145	185	181	185	205	173	157	227	1,981	4.96	1.60
Hepatitis	9	4	0	8	10	7	13	10	8	6	8	7	99	.24	7.00
Spleen Disease	20	26	26	16	16	28	28	19	19	15	17	31	261	.64	3.45
Respiratory Diseases	185	174	171	108	98	129	102	108	100	120	130	173	1,593	3.90	3.45
Phthisis Pulmonalis	3	4	3	6	7	5	3	4	6	3	8	4	56	.14	37.50
Dropsy	2	1	1	...	...	...	2	...	1	2	1	2	12	.03	33.33
Scurvy	5	3	3	4	5	10	16	8	25	48	18	13	159	.39	5.06
Rheumatism	296	223	242	148	151	169	137	142	180	212	206	260	2,365	5.90	
Veneral Diseases	125	148	160	132	120	144	128	148	169	123	171	103	1,763	4.32	
Eye Diseases	54	45	59	67	102	90	85	93	96	68	72	52	883	2.17	
Abscess and Ulcer	392	334	363	291	267	368	326	451	458	307	350	368	4,295	10.51	
Wounds and Accidents	396	390	483	298	408	430	367	372	467	497	397	493	5,000	12.26	
All other Causes	365	411	478	368	410	487	349	397	423	370	350	400	4,908	11.79	
	3,442	3,177	3,627	2,878	3,331	4,146	3,438	4,013	5,113	5,004	4,999	4,701	47,939		
Admitted per cent. of the Average Strength in each Month.															
	8.45	7.57	8.57	7.32	8.59	10.65	8.32	10.00	12.75	12.47	11.92	10.97		117.58	

NATIVE TROOPS, 1868.

II.

TABLE showing the SICKNESS and MORTALITY among the NATIVE TROOPS serving in BENGAL PROPER and in ASSAM during the Year 1868, and the prevalence of the principal Diseases in each Month of the Year.

MONTHS.	Average Strength.	Average Number Daily Sick.	Number Daily Sick per cent. of Strength.	Number of Deaths.	Died per 1,000 of Strength.	CAUSES OF DEATHS IN HOSPITAL.																	Died out of Hospital.		
						Cholera.	Smallpox.	Fever, Intermittent.	Fever, Remittent.	Fever, Continued.	Apoplexy.	Dysentery.	Diarrhoea.	Hepatitis.	Spleen Diseases.	Respiratory Diseases.	Heart Diseases.	Phthisis Pulmonalis.	Dropsy.	Scurvy.	Atrophy and Anæmia.	Wounds and Accidents.		All other Causes.	
January	7,904	382	4.83	22	...	4	...	1	1	1	...	2	2	...	1	5	1	...	...	...	2	...	...	2	...
February	8,365	412	4.92	13	...	2	...	1	...	1	1	1	1	...	1	2	...	1	2	...	...	...	1	...	...
March	8,639	399	4.62	15	...	...	...	5	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
April	8,153	335	4.11	18	...	4	...	...	...	...	1	1	1	1	1	2	...	2	...	...	...	...	...	...	...
May	7,651	311	3.99	11	...	2	...	3	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...
June	7,800	318	4.05	11	...	1	...	2	...	...	...	3	1	...	...	2	...	...	...	...	1	...	1	...	...
July	7,793	315	4.04	9	...	1	...	1	...	...	3	1	1	...	...	2	...	...	...	...	...	...	1	...	...
August	7,887	352	4.46	9	...	2	...	1	1	...	...	...	1	1	...	1	...	1	...	...	...	...	2	...	...
September	7,845	365	4.65	18	...	1	...	...	2	...	1	3	1	1	1	1	...	...	3	...	...	3	2	...	...
October	7,978	444	5.57	17	...	2	...	1	1	...	...	2	1	1	1	1	1	...	...	1	2	...	3	...	...
November	7,882	504	6.39	10	...	...	...	...	1	...	...	1	2	1	...	1	...	1	...	...	3	...	...	...	...
December	7,432	378	5.09	15	...	1	...	...	1	...	...	1	1	...	...	1	...	2	...	3	4	...	...	...	1
						20	...	17	9	2	3	17	13	4	4	23	3	9	3	7	12	1	18	3	
Died per 1,000 of the Average Strength.																									
For the year	7,961	370	4.72	108	21.10	2.51	...	3.51	...	.38	2.13	1.63	.50	.50	2.89	.38	1.13	.38	.38	1.51	.13	2.26	.39		

Absent deaths 113. Ratio of 281 deaths, 30.73 per 1,000 of the Total Regimental Strength.*

CAUSES OF ADMISSIONS.	NUMBER OF ADMISSIONS INTO HOSPITAL IN EACH MONTH.												Total admitted during the Year.	Admitted per cent. of Strength.	Died per cent. of Admissions.
	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.			
Cholera	4	2	4	11	4	11	6	3	2	2	...	3	52	.65	38.46
Smallpox	...	1	...	...	...	...	...	...	...	...	...	...	1	.01	...
Fever, Intermittent	239	258	321	228	255	316	295	392	407	472	470	311	3,063	49.78	...
Fever, Remittent and Continued	4	11	8	1	4	1	9	5	8	7	6	12	76	.96	.69
Apoplexy	...	1	...	1	...	...	...	...	1	...	...	1	4	.05	78.00
Dysentery	135	96	94	79	65	78	58	69	88	93	69	78	692	12.46	1.85
Diarrhoea	60	50	57	62	55	59	51	43	60	34	48	50	631	7.93	...
Hepatitis	2	2	3	2	1	1	6	1	4	...	1	...	23	.29	17.39
Spleen Disease	7	7	5	4	4	7	7	6	6	2	...	10	65	.82	6.15
Respiratory Diseases	42	54	56	50	37	62	52	33	27	27	31	45	520	6.53	4.48
Phthisis Pulmonalis	...	3	...	3	...	1	...	...	1	1	2	2	13	.16	69.23
Dropsy	1	1	1	...	...	...	1	...	...	1	...	...	5	.06	60.00
Scurvy	2	...	2	3	4	5	2	4	21	42	16	6	107	1.34	6.64
Rheumatism	60	50	46	40	43	36	37	40	59	78	80	50	619	7.78	...
Veneral Diseases	30	34	44	22	29	19	26	30	31	22	19	22	328	4.12	...
Eye Diseases	13	10	16	10	8	7	15	21	16	16	9	10	153	1.92	...
Abscess and Ulcer	72	80	68	55	63	57	46	77	74	45	53	43	731	9.18	...
Wounds and Accidents	53	49	86	57	46	63	58	62	81	116	57	56	790	9.98	...
All other Causes	97	92	142	100	104	108	98	95	110	107	97	89	1,238	15.65	...
	820	805	951	728	734	826	770	880	998	1,065	958	787	10,307		
Admitted per cent. of the Average Strength in each Month.															
	10.37	9.62	11.01	8.93	9.22	10.59	9.88	11.16	12.66	13.35	12.15	10.59	129.47		

* The discrepancy between the results here shown, and the results for the same Province exhibited in Table XIV, arises from the different distribution of absent and present deaths; for example, the 11 deaths of the 7th Native Infantry caused by cholera on board boats on the Bhurmpooter were excluded from the provincial statement and included among deaths on the march.

NATIVE TROOPS, 1868.

III.

TABLE showing the SICKNESS and MORTALITY among the NATIVE TROOPS serving in the DINAPORE, BENARES, OUDE and CAWNPORE DISTRICTS during the Year 1868, and the prevalence of the principal Diseases in each Month of the Year.

MONTHS.	Average Strength.	Average Number Daily Sick.	Number Daily Sick per cent. of Strength.	Number of Deaths.	Died per 1,000 of Strength.	CAUSES OF DEATHS IN HOSPITAL.																Died out of Hospital.				
						Cholera.	Smallpox.	Fever, Intermittent.	Fever, Remittent.	Fever, Continued.	Apoplexy.	Dysentery.	Diarrhea.	Hepatitis.	Spleen Disease.	Respiratory Diseases.	Heart Disease.	Phthisis Pulmonalis.	Dropsy.	Scurvy.	Atrophy and Anemia.		Wounds and Accidents.	All other Causes.		
							
January ...	7,983	281	3.52	5	...	...	...	3	...	...	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...
February ...	8,283	322	3.89	2	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...
March ...	8,315	282	3.39	3	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...
April ...	8,275	277	3.35	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
May ...	8,266	267	3.22	5	...	1	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...
June ...	8,583	249	2.93	5	...	...	...	...	2	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...	1
July ...	8,539	239	2.82	3	...	3	...	...	...	...	...	2	1	...	...	...	...	...	...	...	...	...	...	...	...
August ...	8,402	253	3.01	7	...	2	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	1	...	...
September ...	7,547	260	3.45	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
October ...	7,081	254	3.59	5	...	2	...	1	1	...	...	...	...	...	...	...	1	...	...	...	...	...	2	...	...
November ...	6,683	207	3.09	9	...	1	...	...	...	1	...	2	1	1	...	1	...	...	...	...	...	...	1	1	1
December ...	6,463	211	3.28	7	...	...	...	1	...	...	...	1	...	...	...	2	...	...	...	...	...	...	1	1	1
						10	3	5	5	1	...	8	4	1	1	3	...	2	...	...	...	...	1	6	3
Died per 1,000 of the Average Strength.																										
For the year ...	7,856	261	3.32	53	6.75	1.27	.38		1.40		...	1.02	.51	.13	.13	.38	...	.26	...	...	...	...	.13	.76	.38

Absent deaths 44. Ratio of 97 deaths, 9.77 per 1,000 of Total Regimental Strength.

CAUSES OF ADMISSIONS.	NUMBER OF ADMISSIONS INTO HOSPITAL IN EACH MONTH.												Total admitted during the Year.	Admitted per cent. of Strength.	Died per cent. of Admissions.
	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.			
			
Cholera ...	...	...	...	1	1	...	3	2	1	...	2	1	11	.14	60.91
Smallpox ...	1	...	...	3	4	...	...	...	1	...	...	...	9	.11	33.33
Fever, Intermittent	241	257	291	250	302	338	230	329	340	259	205	263	3,308	42.11	.32
Fever, Remittent and Continued	2	5	9	7	4	9	8	15	16	13	14	4	106	1.35	
Apoplexy ...	...	...	...	...	...	1	...	...	...	...	...	...	1	.01	
Dysentery ...	42	63	52	46	41	27	20	37	37	23	27	42	457	5.82	1.60
Diarrhea ...	9	10	21	12	22	36	22	36	22	24	22	16	252	3.21	
Hepatitis ...	1	...	...	...	2	...	2	...	1	3	2	2	13	.17	
Spleen Disease ...	2	9	12	5	6	3	2	4	3	2	...	4	52	.66	1.92
Respiratory Diseases	23	28	20	13	12	15	9	13	14	19	19	23	217	2.76	1.39
Phthisis Pulmonalis	...	...	1	3	3	2	...	1	...	2	2	1	15	.19	13.33
Dropsy ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Scurvy ...	...	...	...	...	...	2	1	1	1	...	...	...	1	.09	...
Rheumatism ...	50	50	43	22	22	33	24	25	27	27	36	54	413	5.26	.17
Veneral Diseases	32	31	31	33	29	37	24	20	29	17	25	28	336	4.28	
Eye Diseases ...	8	6	7	16	25	24	11	13	13	9	11	7	151	1.92	
Abscess and Ulcer	91	72	85	70	66	103	94	82	122	72	75	62	1,004	12.78	.17
Wounds and Accidents	115	116	121	88	123	130	99	78	89	101	75	85	1,220	15.53	
All other Causes	55	100	125	98	102	121	69	63	78	62	54	54	969	12.33	
	675	747	827	655	784	881	618	731	793	634	569	647	8,541		
Admitted per cent. of the Average Strength in each Month.															
	8.45	9.02	9.03	7.92	9.21	10.36	7.32	8.70	10.51	8.95	8.51	10.01	106.72		

NATIVE TROOPS, 1868.

IV.

TABLE showing the SICKNESS and MORTALITY among the NATIVE TROOPS serving in the MEERUT DISTRICT and in ROHILCUND during the year 1868, and the prevalence of the principal Diseases in each Month of the Year.

MONTHS.	Average Strength.	Average Number Daily Sick.	Number Daily Sick per cent. of Strength.	Number of Deaths.	Died per 1,000 of Strength.	CAUSES OF DEATHS IN HOSPITAL.																		
						Cholera.	Smallpox.	Fever, Intermittent.	Fever, Remittent.	Fever, Continued.	Apoplexy.	Dysentery.	Diarrhea.	Hepatitis.	Spleen Disease.	Respiratory Diseases.	Heart Diseases.	Phthisis Pulmonalis.	Dropsy.	Scurvy.	Atrophy and Anæmia.	Wounds and Accidents.	All other Causes.	Died out of Hospital.
January	5,018	122	2.43	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...
February	5,236	143	2.73	4	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	1	...
March	5,771	127	2.20	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
April	5,397	128	2.37	7	...	...	...	1	2	...	...	...	...	...	1	...	...	...	...	...	1	...
May	5,408	100	3.12	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
June	5,280	189	3.57	4	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...	1	1
July	5,253	149	2.84	5	...	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...	1	2
August	5,229	155	2.96	5	...	...	...	...	2	...	...	...	...	...	...	...	...	1	...	...	...	...
September	4,710	152	3.23	2	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...
October	4,735	156	3.29	2	...	1	...	...	...	...	1	...	...	1	...	...	...	...	...	...	...	...
November	5,109	194	3.80	6	...	...	...	1	...	...	...	1	...	2	1	...	...	...	...	...	...	...
December	5,112	100	3.25	8	...	...	...	1	...	...	...	2	...	...	1	1	...	1	...	...	1	...
						1	1	3	4	...	1	4	4	...	3	6	2	...	1	...	5	2	6	3
Died per 1,000 of the Average Strength.																								
For the year	5,189	154	2.97	46	8.86	.19	.19	1.35			.19	.77	.7758	1.16	.381907	.38	1.16	.58

Absent deaths 72. Ratio of 118 deaths, 18.07 per 1,000 of Total Regimental Strength.

CAUSES OF ADMISSIONS.	NUMBER OF ADMISSIONS INTO HOSPITAL IN EACH MONTH.												Total admitted during the Year.	Admitted per cent. of Strength.	Died per cent. of Admissions.
	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.			
Cholera...	...	...	...	2	...	...	...	...	1	1	...	...	4	.08	25.00
Smallpox	4	2	3	7	3	1	...	...	...	...	...	...	26	.50	3.85
Fever, Intermittent	65	69	84	87	135	267	115	153	178	182	209	122	1,666	32.11	
" Remittent	...	...	...	...	...	...	...	...	...	...	...	...	...	...
" Continued	4	7	7	2	8	3	14	10	13	12	1	5	86	1.66	.40
Apoplexy	...	...	...	...	...	1	...	...	...	...	...	...	1	.02	...
Dysentery	10	5	7	11	16	28	17	7	15	18	23	15	172	3.31	
Diarrhoea	8	5	15	10	10	22	15	13	6	9	4	15	132	2.54	2.63
Hepatitis	...	...	...	...	...	...	...	...	...	...	...	...	6	.12	...
Spleen Disease	2	1	2	5	2	3	5	3	3	4	5	5	40	.77	7.50
Respiratory Diseases	12	12	16	14	10	17	10	14	15	22	20	22	184	3.55	3.26
Phthisis Pulmonalis	1	...	1	...	...	...	...	...	1	...	...	1	4	.08	...
Dropsy	...	...	...	...	...	...	...	...	...	1	...	...	1	.02	...
Scurvy	...	1	1	...	...	...	...	1	1	2	...	3	9	.17	...
Rheumatism	44	26	28	22	24	17	15	17	8	8	17	26	252	4.86	
Veneral Diseases	12	30	14	16	16	16	18	17	14	14	19	20	206	3.97	
Eye Diseases	12	8	4	11	22	9	9	6	8	10	9	6	114	2.20	
Abscess and Ulcer	47	40	31	43	34	38	26	42	36	36	36	38	447	8.61	
Wounds and Accidents	39	38	51	41	56	51	39	38	39	28	45	41	504	9.71	
All other Causes	42	49	53	60	53	90	47	43	45	50	41	51	624	12.02	
	302	293	318	331	399	563	332	365	383	395	431	376	4,478		
Admitted per cent. of the Average Strength in each Month.															
	6.02	5.60	5.51	6.13	7.19	10.64	6.32	6.98	6.73	6.34	6.44	7.36			

NATIVE TROOPS, 1868.

V.

TABLE showing the SICKNESS and MORTALITY among the NATIVE TROOPS serving in the AGRA DISTRICT and in CENTRAL INDIA during the Year 1868, and the prevalence of the principal Diseases in each Month of the Year.

MONTHS.	Average Strength.	Average Number Daily Sick.	Number Daily Sick per cent. of Strength.	Number of Deaths.	Died per 1,000 of Strength.	CAUSES OF DEATHS IN HOSPITAL.																			Died out of Hospital.
						Cholera.	Smallpox.	Fever, Intermittent.	Fever, Remittent.	Fever, Continued.	Apoplexy.	Dysentery.	Diarrhoea.	Hepatitis.	Spleen Disease.	Respiratory Diseases.	Heart Diseases.	Phthisis Pulmonalis.	Dropsy.	Scurvy.	Atrophy and Anæmia.	Wounds and Accidents.	All other Causes.		
January	6,127	247	4.03	1	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
February	6,387	274	4.29	1	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
March	6,463	260	3.87	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
April	6,006	218	3.63	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
May	5,912	236	3.99	1	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..
June	5,919	238	4.02	4	..	..	..	..	..	..	..	1	2	..	..	..	..	..	..	..	..	..	..	1	..
July	6,838	261	3.82	3	..	..	..	1	..	..	..	1	2	..	..	..	..	..	..	..	..	..	..	..	..
August	6,356	337	5.30	3	..	1	..	..	..	..	..	..	2	..	..	..	1	..	..	..	..	..	..	..	..
September	6,112	293	4.79	3	..	..	..	2	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
October	6,230	354	5.68	1	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	1	..	..
November	6,104	346	5.67	4	..	..	..	1	..	..	..	..	..	1	1	..	1	..	..	..	..	..	2	..	..
December	4,959	233	4.70	6	..	..	..	2	1	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..
						1	...	6	4	...	1	1	5	...	1	1	...	2	...	...	4	...	2	...	
Died per 1,000 of the Average Strength.																									
For the year	6,118	274	4.48	28	4.57	1.16	...	1.64	...	...	1.16	1.16	1.82	...	1.16	1.16	...	1.33	...	...	1.65	...	...	1.33	...

Absent deaths 33. Ratio of 61 deaths, 9.13 per 1,000 of Total Regimental Strength.

CAUSES OF ADMISSIONS.	NUMBER OF ADMISSIONS INTO HOSPITAL IN EACH MONTH.												Total admitted during the Year.	Admitted per cent. of Strength.	Died per cent. of Admissions.
	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.			
Cholera	...	...	...	...	...	...	...	2	...	...	...	...	2	.03	50.00
Smallpox	...	...	3	1	1	...	...	...	1	...	...	...	6	.10	...
Fever, Intermittent	182	140	194	311	334	276	387	333	485	593	850	326	4,220	68.98	...
" Remittent	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
" Continued	1	7	4	6	3	10	3	2	3	4	...	1	44	.72	.24
Apoplexy	...	...	...	...	1	...	...	1	...	...	...	...	2	.03	50.00
Dysentery	12	11	15	17	13	18	14	25	35	23	23	12	218	3.56	...
Diarrhoea	13	10	17	11	18	25	12	20	13	10	1	9	159	2.60	1.59
Hepatitis	3	...	...	2	1	1	2	...	1	...	...	...	10	.16	...
Spleen Disease	4	4	1	1	1	7	4	1	...	3	2	3	31	.51	3.23
Respiratory Diseases	22	24	23	4	7	12	8	11	11	13	7	12	154	2.52	.65
Phthisis Pulmonalis	...	...	...	...	1	1	1	...	1	...	...	...	6	.10	33.33
Dropsy	...	...	...	...	...	...	1	...	...	...	1	1	3	.05	...
Scurvy	1	...	...	1	...	1	...	1	...	...	1	1	6	.10	...
Rheumatism	37	28	33	18	15	33	24	21	25	24	24	20	302	4.94	...
Venereal Diseases	24	33	45	33	24	40	24	41	49	32	38	30	417	6.81	...
Eye Diseases	1	5	15	12	13	13	13	9	18	14	10	7	129	2.11	...
Abscess and Ulcer	66	66	70	49	44	81	50	83	78	53	64	40	750	12.26	...
Wounds and Accidents	60	60	88	45	54	82	66	88	74	84	62	60	832	13.60	...
All other Causes	65	78	64	43	40	60	43	73	69	38	40	35	648	10.59	...
	491	494	572	554	570	660	661	711	863	891	925	557	7,939		
Admitted per cent. of the Average Strength in each Month.															
	8.01	7.58	8.85	9.22	9.34	11.15	9.67	11.19	14.12	14.30	15.15	11.23	129.76		

NATIVE TROOPS, 1868.

VII.

COMPARATIVE STATEMENT of the RATIOS of SICKNESS and MORTALITY among the NATIVE TROOPS serving in the various PROVINCES of the BENGAL PRESIDENCY, for the Year 1868.

(This Statement is for the men of the Regular Army only, and for the Strength represented in Tables I to VI.)

DISEASES.	BENGAL PROPER AND ASSAM.			DINAPORE, BENARES, OUDE, AND CANNPORE DISTRICTS.			MEERUT AND ROHILCUND.			AGRA AND CENTRAL INDIA.			PUNJAB.			BENGAL PRESIDENCY.		
	Average Strength	Daily Sick per cent. of Strength	Admitted per cent. of Strength	Average Strength	Daily Sick per cent. of Strength	Admitted per cent. of Strength	Average Strength	Daily Sick per cent. of Strength	Admitted per cent. of Strength	Average Strength	Daily Sick per cent. of Strength	Admitted per cent. of Strength	Average Strength	Daily Sick per cent. of Strength	Admitted per cent. of Strength	Average Strength	Daily Sick per cent. of Strength	Admitted per cent. of Strength
Cholera
Smallpox
Fever, Intermittent
Fever, Remittent and Continued
Apoplexy
Dysentery
Diarrhea
Hepatitis
Spleen Disease
Respiratory Diseases
Phthisis Pulmonalis
Dropsy
Scurvy
Rheumatism
Veneral Diseases
Eye Diseases
Abscess and Ulcer
Wounds and Accidents
Other Causes
	128-47	...	...	108-72	...	...	88-30	...	...	128-76	...	...	119-61	...	...	117-58	...	...

VIII.

(The Bhopal Battalion is not included in this Statement.)

CAUSES OF ADMISSIONS.	NUMBER OF ADMISSIONS INTO HOSPITAL IN EACH MONTH.												Total admitted during the Year.	Admitted per cent. of Strength.	Died per cent. of Admissions.	
	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.				
Cholera	
Smallpox	
Fever, Intermittent ...	88	64	70	82	96	71	45	97	165	157	116	93	1,134	35.69	}	78
" Remittent ...	1	1	4	...	3	5	...	1	3	2	3	...	23	72		
" Continued ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Apoplexy
Dysentery ...	1	7	8	4	14	5	6	7	14	3	7	5	81	2.55	}	1.11
Diarrhoea ...	2	2	9	8	8	10	10	13	11	8	9	10	100	3.15		
Hepatitis ...	2	1	...	...	1	...	...	...	1	...	...	1	6	.19
Spleen Disease ...	1	...	2	2	1	2	8	.25	}	3.67
Respiratory Diseases ...	8	8	13	5	8	5	1	1	7	6	9	4	75	2.36		
Phthisis Pulmonalis ...	...	...	1	...	...	1	...	...	...	...	...	...	1	.03
Dropsy	1	2	...	4	.13	}	50.00
Scurvy ...	...	...	...	...	1	...	...	...	...	...	...	1	2	.06
Rheumatism ...	13	15	14	13	8	17	19	8	18	11	13	8	157	4.94		
Veneral Diseases ...	15	10	8	18	12	25	15	13	9	10	14	8	157	4.94	}	.47
Eye Diseases ...	8	8	18	9	12	15	10	14	34	20	18	10	174	5.48		
Abscess and Ulcer ...	24	19	27	11	19	34	22	15	32	20	28	37	288	9.07		
Wounds and Accidents...	34	33	35	23	19	36	24	33	33	27	33	28	357	11.24	}	18.19
All other Causes ...	49	57	65	54	52	64	45	55	63	26	26	22	578	18.19		
	246	225	274	229	244	288	197	257	390	291	275	239	3,145			
Admitted per cent. of the Average Strength in each Month.																
	7.94	7.17	8.71	7.24	7.75	9.09	6.18	8.05	12.30	9.80	8.48	6.89	96.99			

	TOTAL	8,293
Deaths at Head Quarters, 24; on Detachment, 13; on Furlough, 6; Transfers given, 3; Invalided for Discharge, 59; otherwise discharged 249	... ..	85
Remaining on the rolls of the Regiments on 31st December ...	... ..	4,908

NATIVE TROOPS, 1868.

IX.

TABLE showing the SICKNESS and MORTALITY among the NATIVE TROOPS composing the PUNJAB IRREGULAR FORCE during the Year 1868, and the prevalence of the principal Diseases in each Month of the Year.

MONTHS.	Average Strength.	Average Number Daily Sick.	Number Daily Sick per cent. of Strength.	Number of Deaths.	Died per 1,000 of Strength.	CAUSES OF DEATHS AT HEAD QUARTERS AND IN DETACHMENTS.																		
						Cholera.	Smallpox.	Fever, Intermittent.	Fever, Remittent.	Fever, Continued.	Apoplexy.	Dysentery.	Diarrhoea.	Hepatitis.	Spleen Disease.	Respiratory Diseases.	Heart Diseases.	Phthisis Pulmonalis.	Dropsy.	Scurvy.	Atrophy and Anæmia.	Wounds and Accidents.	All other Causes.	
January ...	10,814	326	3.01	8	...	...	...	1	1	...	1	1	...	...	...	4	...	...	...	...	...	...	...	...
February ...	10,747	276	2.57	6	...	...	...	1	1	...	...	...	...	1	...	1	...	...	...	...	...	...	...	1
March ...	11,036	263	2.38	2	...	...	...	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...
April ...	10,439	210	2.01	7	...	...	...	...	...	...	...	...	1	...	...	3	...	1	...	...	...	...	1	1
May ...	9,382	207	2.21	7	...	...	...	1	2	...	...	...	...	...	...	3	1	...	...	...	...	...	1	1
June ...	9,691	258	2.69	5	...	...	...	...	...	...	...	...	1	...	...	3	...	...	...	...	...	...	1	1
July ...	9,666	297	3.08	6	...	...	...	...	1	...	...	...	...	...	...	...	...	2	...	...	...	...	1	1
August ...	9,682	339	3.49	6	...	...	...	...	...	...	...	2	...	1	...	...	...	1	...	...	...	...	1	1
September ...	10,017	354	3.53	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...
October ...	10,084	336	3.33	10	...	...	...	2	1	...	...	2	1	1	...	...	1	...	...	...	...	...	2	...
November ...	10,668	418	3.90	10	...	...	...	1	1	...	...	...	2	1	...	2	...	1	...	...	...	...	1	1
December ...	11,889	354	3.05	9	...	...	1	...	...	...	...	2	...	...	...	5	...	...	...	...	...	...	1	1
						...	1	6	7	...	1	7	5	5	...	20	2	5	1	...	...	7	10	
Died per 1,000 of the Average Strength.																								
For the year ...	10,308	303	2.94	77	7.47	...	10	1.26	10	68	48	48	...	1.94	20	48	10	...	...	68	97			

Not included in the above, killed in action 19 per 1,000 of Strength 1.84.

CAUSES OF ADMISSIONS.	NUMBER OF ADMISSIONS INTO HOSPITAL IN EACH MONTH.												Total admitted during the Year.	Admitted per cent. of Strength.	Died per cent. of Admissions.
	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.			
Cholera ...	...	...	...	...	...	...	...	1	...	...	...	...	1	0.01	...
Smallpox ...	...	...	...	...	...	...	...	...	...	...	...	...	1	0.01	...
Fever, Intermittent ...	302	226	219	171	251	494	364	380	610	543	498	389	4,447	48.14	...
" Remittent ...	10	3	8	3	10	8	3	6	5	6	3	2	66	0.64	2.29
" Continued ...	1	...	1	...	...	4	1	...	...	...	...	...	7	0.07	14.28
Apoplexy ...	24	15	15	23	26	31	39	81	98	95	53	31	520	5.04	...
Dysentery ...	19	15	18	23	19	27	54	76	67	138	103	37	594	6.76	1.08
Diarrhoea ...	1	...	4	...	1	2	2	...	3	1	...	1	15	0.15	33.33
Hepatitis ...	8	1	6	...	4	1	4	3	1	1	8	1	38	0.37	...
Spleen Disease ...	56	30	44	25	33	26	13	19	27	34	45	75	426	4.13	4.70
Respiratory Diseases ...	2	1	2	...	2	2	2	1	...	...	...	3	15	0.15	33.33
Phthisis Pulmonalis ...	...	...	...	...	...	...	1	...	...	...	...	...	1	0.01	...
Dropsy ...	3	2	...	2	1	...	...	2	...	...	1	3	17	0.17	...
Scurvy ...	75	44	54	39	26	43	25	31	43	43	45	57	523	5.07	...
Rheumatism ...	20	18	25	18	11	24	23	25	18	22	10	15	226	2.19	...
Veneral Diseases ...	12	11	13	13	31	36	23	31	35	21	23	23	270	2.63	...
Eye Diseases ...	100	73	76	54	73	107	133	174	147	111	118	112	1,283	12.44	3.8
Abscess and Ulcer ...	86	91	139	83	100	123	111	149	144	168	139	179	1,511	14.66	...
Wounds and Accidents ...	70	76	99	93	91	120	122	123	129	76	74	73	1,145	11.11	...
All other Causes ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
													11,106		
Admitted per cent. of the Average Strength in each Month.															
													107.74		

* The Death-rate of the Punjab Force was 10.98 per 1,000, the equivalent of 134 deaths out of a total strength of 12,302.

The Gain and Loss Statement for the Force is as under—

Strength borne on the Regimental Rolls on 1st January 1868 ...	12,374
Additions received during the year ...	1,396
TOTAL ...	13,770
Deaths at Head Quarters and in Detachments, 96; died while on Furlough and Sick Leave, 38;	
Invalids for discharge, 347; transfers given, 18; discharged otherwise, 954 ...	1,353
Remaining on the rolls at the close of 1868 ...	12,417

ABSTRACT of the RETURNS showing the ADMISSIONS, DEATHS,

1.—REGIMENTS of BENGAL											
REGIMENT AND STATION OF 1868.		Date of Arrival from Station previously occupied.	REGIMENTAL STRENGTH.		Invalids.	INVALIDED.		Died.		Loss per 1,000.	
			Number borne on the Rolls.*	Average Strength present during 1868.		To their homes for change of air.	For Discharge.	With the Regiment.	Absent from the Regiment.	By Invaliding for Discharge.	By Deaths.
1	14th Native Infantry, Fort William ...	January 1868, from Benares ...	768	660	175	45	8	25	8	10.12	12.97
2	2nd Native Infantry, Alipore ...	November 1866, from Lucknow ...	765	658	129	73	14	18	26	18.30	56.91
3	1st Native Infantry, Dum-Dum ...	March 1867, from Morar ...	742	640	211	17	13	24	5	17.52	36.09
4	17th Bengal Cavalry, Barrackpore ...	May 1866, from Dacca... ..	440	375	117	14	5	6	5	11.22	24.66
5	9th Native Infantry, Barrackpore ...	April 1866, from Fyzabad ...	748	748	52	41	6	29	14	8.02	37.40
6	7th Native Infantry, Dacca (Wing) ...	December 1867, from Allahabad...	774	381	175	2	4	21	2	5.17	26.72
7	7th Native Infantry, Cachar (Wing)...		774	338	160						
8	14th Native Infantry, Shillong ...	A Local Corps ...	802	839	100	17	12	8	6	11.15	15.60
9	Eurasian Battery, Shillong ...	.....	66	66	110	3	...	1	2	...	1.05
10	13rd Native Infantry, Gowhatti and Tezpor ...	A Local Corps ...	883	768	161	14	...	15	4	...	22.02
11	42nd Native Infantry, Debrooghur ...	A Local Corps ...	911	834	107	5	18	9	5	6.70	16.35
12	Assam M. T. Battery, Debrooghur ...	A Local Corps ...	72	70	...	...	1	1	1	13.00	21.18
13	32nd Native Infantry, Buxa ...	October 1865, from Ferozepore ...	706	650	200	10	14	11	2	10.00	18.01
14	6th Native Infantry, Julpigoree ...	March 1866, from Bhootan ...	618	565	100	23	4	7	2	1.10	24.40
15	18th Native Infantry, Bhaugulpore ...	May 1865, from Julpigoree ...	754	695	75	...	20	13	12	...	10.15
REGIMENTS OF BENGAL PROPER AND ASSAM			9,145	8,276	108	203	110	188	93	11.11	30.71
2.—REGIMENTS of BEHAR, BENARES,											
1	11th Native Infantry, Dinapore ...	October 1865, from Bhootan ...	792	730	...	27	16	6	3	21.50	16.10
2	8th Bengal Cavalry, Segowlie ...	November 1865, from Seetapore ...	481	312	100	27	21	...	5	13.00	10.00
3	5th Native Infantry, Benares ...	January 1868, from Dacca ...	602	590	50	27	15	8	5	21.02	21.70
4	37th Native Infantry, Goruckpore ...	November 1865, from Agra ...	787	708	100	7	7	...	4	8.80	5.00
5	16th Native Infantry, Fyzabad ...	December 1865, from Dinapore ...	791	788	50	5	11	2	1	10.80	1.78
6	13th Bengal Cavalry, Lucknow ...	March 1868, from Peshawur ...	497	412	212	7	2	7	3	1.02	26.12
7	34th Native Infantry, Lucknow ...	February 1867, from Barrackpore...	771	766	51	9	4	5	6	5.10	11.20
8	39th Native Infantry, Lucknow ...	March 1867, from Assam ...	780	768	107	3	19	3	4	24.08	8.87
9	5th Bengal Cavalry, Seetapore ...	April 1866, from Bhootan ...	496	493	67	...	9	1	...	18.15	2.02
10	6th Bengal Cavalry, Cawnpore and Jhansi ...	December 1867, from Sealkote ...	476	466	60	1	7	1	1	14.71	4.20
11	30th Native Infantry, Cawnpore ...	June 1865, from Bhootan ...	730	619	80	9	11	2	2	15.07	5.48
12	4th Native Infantry, Allahabad ...	December 1867, from Jhansi ...	717	691	175	4	10	16	1	13.38	22.76
13	40th Native Infantry, Banda and Nowgong ...	January 1865, from Barrackpore...	791	627	210	56	...	5	3	...	10.11
14	7th Bengal Cavalry, Nowgong and Jubbulpore...	November 1867, from Lucknow ...	446	380	130	15	13	...	3	29.15	6.73
15	38th Native Infantry, Nagode ...	{ January 1865, from Chittagong } and Barrackpore.	728	671	87	...	...	1	...	...	1.37
REGIMENTS OF BEHAR, BENARES, OUDE, AND CAWNPORE			9,925	8,666	106	197	145	56	41	14.01	9.77

* The Strength is taken as on 1st April; in a few cases the average strength for the year exceeded the strength at this date from the recruits of the year having been received subsequently. The loss by death and invaliding is calculated on the maximum strength, and the admission rate on the average present throughout the year as shown in the second column.

TROOPS, 1868.

IV.

and INVALIDING of each REGIMENT for the Year.

PROPER, BHOOTAN and ASSAM.

Total Admissions into Hospital, and Deaths in Hospital during the year.		CAUSES OF ADMISSIONS INTO HOSPITAL AND OF DEATHS IN HOSPITAL DURING THE YEAR.																										
		Cholera.	Fever.	Dysentery and Diarrhea.	Ophthalmia.	Rheumatism.	Veneral Affec- tions.	Scurvy.	Anæmia and De- bility.	Guinea Worm.	Dropsy.	Phthisis Pulmon- alis.	Apoplexy.	Neuralgic Affec- tions.	Heart Disease ex- cluding Peri- carditis.	Bronchitis and Asthma.	Pleurisy and Pneumonia.	Spleen Disease.	Hepatitis.	Diseases of the Di- gestive System.	Diseases of the Urinary System.	Diseases of the Ge- nerative System.	Scabies and Skin Diseases.	Abscess and Ulcer.	Injuries.	Punished.	All other causes.	
1	{ Admitted ... 1,154 Died ... 25	2	279	319	17	150	59	62	13	2	...	1	...	8	1	130	2	1	1	44	2	3	27	61	60	...	10	
2	{ Admitted ... 827 Died ... 15	15	315	251	10	35	13	7	12	...	...	...	1	18	...	23	...	1	...	16	3	...	35	30	33	...	9
3	{ Admitted ... 1,567 Died ... 45	7	569	345	3	78	24	...	13	...	1	1	...	56	...	60	6	5	...	53	...	7	56	102	159	...	23	
4	{ Admitted ... 438 Died ... 6	...	99	91	5	27	27	4	2	...	...	...	...	6	...	8	3	3	3	21	3	...	23	43	65	...	5
5	{ Admitted ... 616 Died ... 29	4	316	89	9	63	13	8	3	1	...	2	...	5	...	27	4	1	...	5	...	...	13	23	26	...	4
6	{ Admitted ... 641 Died ... 6	6	229	130	11	9	12	...	...	...	...	2	1	...	...	13	...	10	4	...	...	...	...	36	48	...	130
7	{ Admitted ... 541 Died ... 11	20	184	60	21	16	14	...	1	...	1	2	...	14	...	36	2	...	...	24	...	2	20	51	67	...	6
8	{ Admitted ... 506 Died ... 3	4	138	70	8	23	28	13	2	...	1	...	...	4	...	36	7	16	3	5	1	10	9	62	49	...	18
9	{ Admitted ... 92 Died ... 1	...	18	11	...	14	...	2	...	...	1	1	...	...	...	9	...	...	7	...	...	...	...	3	9	...	17
10	{ Admitted ... 1,236 Died ... 1	2	570	136	13	24	49	...	25	...	1	2	...	20	...	88	5	14	3	22	1	5	96	77	74	...	10	
11	{ Admitted ... 1,143 Died ... 1	2	552	149	18	57	13	2	7	...	...	...	...	42	...	35	1	5	2	29	...	5	40	90	82	3	9
12	{ Admitted ... 67 Died ... 1	...	32	9	1	4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	5	12	...	1
13	{ Admitted ... 363 Died ... 1	...	188	32	7	13	4	1	1	...	1	...	...	7	...	39	2	...	1	24	5	...	5	8	17	...	8
14	{ Admitted ... 879 Died ... 1	...	325	106	5	30	24	8	8	5	...	1	...	29	...	24	3	4	...	32	2	1	95	69	103	...	1	
15	{ Admitted ... 513 Died ... 1	...	221	41	18	12	32	...	15	...	...	2	...	3	...	7	3	5	...	9	...	...	11	81	41	...	12
{ Admitted ... 10,593 Died ... 14		62	4,034	1,739	146	555	315	107	102	8	6	14	2	212	1	535	38	65	24	294	17	33	433	741	844	3	263	

OUDE and CAWNPORE.

1	{ Admitted ... 435 Died ... 5	1	155	25	2	10	15	1	13	...	...	3	...	8	...	16	1	5	1	9	2	4	22	73	60	...	9
2	{ Admitted ... 408 Died ... 6	...	141	37	8	36	10	...	...	...	3	...	...	3	...	13	2	2	2	15	5	9	13	47	60	...	2
3	{ Admitted ... 491 Died ... 1	2	131	66	6	23	34	1	8	8	...	8	...	4	...	33	1	11	1	23	...	1	15	40	46	...	29*
4	{ Admitted ... 779 Died ... 1	...	219	36	13	29	62	...	3	...	1	...	...	10	...	22	9	4	2	9	1	4	114	95	138	1	7
5	{ Admitted ... 439 Died ... 1	1	217	50	5	12	13	...	1	...	...	5	...	6	...	2	1	3	1	10	1	...	5	54	49	...	3
6	{ Admitted ... 872 Died ... 1	1	395	44	15	45	35	...	1	4	...	...	...	6	...	2	3	...	1	15	5	...	10	145	144	...	1
7	{ Admitted ... 417 Died ... 1	...	128	17	14	24	25	1	2	...	...	5	...	10	...	4	...	...	...	16	1	4	63	47	51	...	5
8	{ Admitted ... 818 Died ... 1	1	460	45	13	12	19	3	9	...	...	...	...	14	...	24	...	...	...	51	...	4	35	68	57	...	3
9	{ Admitted ... 333 Died ... 1	...	89	48	6	20	11	...	2	2	...	...	...	2	...	11	...	...	...	18	...	1	5	63	59	...	2
10	{ Admitted ... 307 Died ... 1	...	83	11	6	14	51	...	...	...	...	...	...	5	...	8	3	...	1	8	1	2	15	36	61	...	2
11	{ Admitted ... 519 Died ... 1	1	210	42	17	36	32	2	11	...	...	3	1	9	...	1	2	4	...	17	1	...	24	37	62	...	7
12	{ Admitted ... 1,236 Died ... 1	6	420	222	18	37	19	...	...	2	...	...	...	35	...	23	10	5	...	5	3	2	47	125	206	...	162
13	{ Admitted ... 1,505 Died ... 1	...	737	86	10	53	34	...	...	...	...	...	...	20	...	27	1	12	2	12	...	2	88	162	313†	...	0
14	{ Admitted ... 807 Died ... 1	...	164	24	9	58	27	1	...	3	...	...	...	11	...	10	...	1	1	22	...	4	16	89	64	...	3
15	{ Admitted ... 598 Died ... 1	...	294	36	22	12	38	...	...	...	...	...	...	6	...	4	5	7	2	2	1	4	31	62	33	...	7
{ Admitted ... 9,652 Died ... 1		13	3,843	783	164	421	425	9	50	23	1	24	1	139	...	199	38	54	14	232	21	41	443	1,163	1,403	1	148

* 18 cases of Menesles.

† 56 cases of Parotitis.

‡ 181 cases of Foot Sore.

ABSTRACT of the RETURNS showing the ADMISSIONS, DEATHS,

1.—REGIMENTS of BENGAL

1.—REGIMENTS OF BENGAL												
REGIMENT AND STATION OF 1868.			Date of Arrival from Station previously occupied.		REGIMENTAL STRENGTH.		INVALIDED.		DIED.		LOSS FOR 1,000	
			Number borne on the Rolls.*	Average Strength present during 1868.	Average strength of 1868 per cent of the Average Strength.	To their homes for change of air.	For Discharge.	With the Regiment.	Absent from the Regiment.	By Death and Discharge.	By Deaths.	
1	14th Native Infantry, Fort William ...	January 1868, from Benares ...	768	660	175	45	8	25	8	1042	1297	
2	2nd Native Infantry, Alipore ...	November 1866, from Lucknow ...	765	658	120	72	14	18	25	1830	5621	
3	1st Native Infantry, Dum-Dum ...	March 1867, from Morar ...	742	640	140	17	13	24	5	1752	3908	
4	17th Bengal Cavalry, Barrackpore ...	May 1866, from Dacca... ..	446	375	137	14	5	6	5	1122	2466	
5	9th Native Infantry, Barrackpore ...	April 1866, from Fyzabad ...	748	748	82	41	6	29	14	802	5740	
6	7th Native Infantry, Dacca (Wing) ...	December 1867, from Allahabad...	774	361	135	2	4	21	2	517	2972	
7	7th Native Infantry, Cachar (Wing)... ..			338								160
8	44th Native Infantry, Shillong ...	A Local Corps	892	839	100	17	12	8	6	1116	1369	
9	Eurasian Battery, Shillong ... ..	.....	66	66	110	3	...	1	2	...	1545
10	43rd Native Infantry, Gowhaty and Tezpor ...	A Local Corps	883	768	101	14	...	15	4	...	2152	
11	42nd Native Infantry, Debrooghur ...	A Local Corps	911	834	107	5	18	9	5	1040	1347	
12	Assam M. T. Battery, Debrooghur ...	A Local Corps	72	70	100	...	1	1	1	1000	2008	
13	32nd Native Infantry, Buxa	October 1865, from Ferozepore ...	700	650	70	10	14	11	2	2030	1800	
14	6th Native Infantry, Julpigoree	March 1866, from Bhootan	618	565	100	23	4	7	2	1040	3446	
15	18th Native Infantry, Bhaugulpore ...	May 1865, from Julpigoree ...	751	695	74	...	20	13	12	2000	3000	
REGIMENTS OF BENGAL PROPER AND ASSAM			9,145	8,276	100	263	119	184	93	13,000	60,000	

2.—REGIMENTS of BEHAR, BENARES,

1	11th Native Infantry, Dinapore	October 1865, from Bhootan	792	730	100	27	16	5	3	2000	1000
2	8th Bengal Cavalry, Segowlie	November 1865, from Seetapore ...	481	312	100	27	21	...	5	1000	1000
3	5th Native Infantry, Benares	January 1868, from Dacca	602	590	100	27	15	8	5	2192	2192
4	37th Native Infantry, Goruckpore	November 1865, from Agra	787	708	100	7	7	...	4	1000	1000
5	10th Native Infantry, Fyzabad	December 1865, from Dinapore ...	792	788	100	5	11	2	1	1000	1000
6	13th Bengal Cavalry, Lucknow	March 1868, from Peshawur	497	412	100	7	2	7	3	1000	1000
7	34th Native Infantry, Lucknow	February 1867, from Barrackpore...	771	766	100	9	4	5	6	1000	1127
8	39th Native Infantry, Lucknow	March 1867, from Assam	789	768	100	3	19	3	4	2408	887
9	5th Bengal Cavalry, Seetapore	April 1866, from Bhootan	496	495	100	...	9	1	...	1815	262
10	6th Bengal Cavalry, Cawnpore and Jhansi ...	December 1867, from Sealkote	476	466	100	1	7	1	1	1471	429
11	30th Native Infantry, Cawnpore	June 1865, from Bhootan	730	649	100	9	11	2	2	1000	548
12	4th Native Infantry, Allahabad	December 1867, from Jhansi	717	694	100	4	10	16	1	1338	2276
13	40th Native Infantry, Banda and Nowgong ...	January 1865, from Barrackpore...	791	627	100	56	...	5	3	...	1000
14	7th Bengal Cavalry, Nowgong and Jubbulpore...	November 1867, from Lucknow	446	390	100	15	13	...	3	2015	673
15	38th Native Infantry, Nagode	January 1865, from Chittagong } and Barrackpore.	728	671	100	...	...	1	...	...	1000
REGIMENTS OF BEHAR, BENARES, OUDE, AND CAWNPORE			9,925	9,086	100	197	145	58	41	11,000	977

* The Strength is taken as on 1st April; in a few cases the average strength for the year exceeded the strength at this date from the recruits of the year having been received subsequently. The loss by death and invaliding is calculated on the maximum strength, and the admission rate on the average present throughout the year as shown in the second column.

TROOPS, 1868.

IV.

and INVALIDING of each REGIMENT for the Year.

PROPER, BHOOTAN and ASSAM.

Total Admissions into Hospital, and Deaths in Hospital during the year.		CAUSES OF ADMISSIONS INTO HOSPITAL AND OF DEATHS IN HOSPITAL DURING THE YEAR.																										
		Cholera.	Fever.	Dysentery and Diarrhea.	Ophthalmia.	Rheumatism.	Veneral Affec- tions.	Scurvy.	Anemia and De- bility.	Guinea Worm.	Dropsy.	Phthisis Pulmon- aria.	Apoplexy.	Neuralgic Affec- tions.	Heart Disease ex- cluding Peri- carditis.	Bronchitis and Asthma.	Pleurisy and Pneumonia.	Spleen Disease.	Hepatitis.	Diseases of the Di- gestive System.	Diseases of the Urinary System.	Diseases of the Ge- nerative System.	Scabies and Skin Diseases.	Abscess and Ulcer.	Injuries.	Punished.	All other causes.	
1	{ Admitted ... 1,154 Died ... 2	2	279	219	17	150	59	62	18	2	...	1	...	8	1	130	2	1	1	44	2	3	27	61	60	...	10	
2	{ Admitted ... 827 Died ... 15	15	315	251	10	35	13	7	12	...	...	...	1	18	...	23	...	1	...	16	3	...	35	30	33	...	9
3	{ Admitted ... 1,567 Died ... 21	7	509	345	3	78	24	...	13	...	1	1	...	56	...	60	6	5	...	53	...	7	56	102	150	...	23	
4	{ Admitted ... 438 Died ... 6	...	90	91	5	27	27	4	2	...	...	...	...	6	...	8	3	3	3	21	3	...	23	43	65	...	5
5	{ Admitted ... 616 Died ... 2	4	316	89	9	63	13	8	3	1	...	2	...	5	...	27	4	1	...	5	...	...	13	23	26	...	4
6	{ Admitted ... 641 Died ... 6	6	220	130	11	9	12	...	...	...	...	2	1	...	...	13	...	10	4	...	...	...	...	36	46	...	130
7	{ Admitted ... 541 Died ... 1	20	184	60	21	16	14	...	1	...	1	2	...	14	...	36	2	...	...	24	...	2	20	51	67	...	6
8	{ Admitted ... 506 Died ... 7	4	138	70	8	23	28	13	2	...	1	...	...	4	...	36	7	16	3	5	1	10	9	62	49	...	18
9	{ Admitted ... 92 Died ... 1	...	18	11	...	14	...	2	...	...	1	1	...	...	...	9	...	...	7	...	...	...	...	3	9	...	17
10	{ Admitted ... 1,236 Died ... 1	2	570	136	13	24	49	...	25	...	1	2	...	20	...	88	5	14	3	22	1	5	96	77	74	...	10	
11	{ Admitted ... 1,143 Died ... 1	2	552	149	18	57	13	2	7	...	...	...	...	42	...	35	1	5	2	29	...	5	40	90	82	3	9
12	{ Admitted ... 67 Died ... 1	...	32	9	1	4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	5	12	...	1
13	{ Admitted ... 363 Died ... 1	...	188	32	7	13	4	1	1	...	1	...	...	7	...	39	2	...	1	24	5	...	5	8	17	...	8
14	{ Admitted ... 679 Died ... 1	...	325	106	5	30	28	8	8	5	...	1	...	29	...	24	3	4	...	32	2	1	95	69	103	...	1	
15	{ Admitted ... 513 Died ... 1	...	221	41	18	12	32	...	15	...	...	2	...	3	...	7	3	5	...	9	...	...	11	81	41	...	12
{ Admitted ... 10,583 Died ... 15		62	4,034	1,739	146	555	315	107	102	8	0	14	2	212	1	535	39	65	24	294	17	33	433	741	844	3	263	

OUDE and CAWNPORE.

1	{ Admitted ... 435 Died ... 1	1	155	25	2	10	15	1	13	...	...	3	...	8	...	16	1	5	1	9	2	4	22	73	60	...	9
2	{ Admitted ... 408 Died ... 1	...	141	37	8	36	10	...	...	3	...	...	...	3	...	13	2	2	2	15	5	9	13	47	60	...	2
3	{ Admitted ... 491 Died ... 1	2	131	66	6	23	34	1	8	8	...	8	...	4	...	33	1	11	1	23	...	1	15	40	46	...	29
4	{ Admitted ... 770 Died ... 1	...	219	36	13	29	62	...	3	...	1	...	...	10	...	22	0	4	2	0	1	4	114	95	138	1	7
5	{ Admitted ... 430 Died ... 1	1	217	50	5	12	13	...	1	...	...	5	...	6	...	2	1	3	1	10	1	...	5	54	40	...	3
6	{ Admitted ... 872 Died ... 1	1	305	44	15	45	35	...	1	4	...	...	...	6	...	2	3	...	1	15	5	...	10	145	144	...	1
7	{ Admitted ... 417 Died ... 1	...	128	17	14	24	25	1	2	...	...	5	...	10	...	4	...	...	...	16	1	4	63	47	51	...	5
8	{ Admitted ... 818 Died ... 1	1	460	45	13	12	19	3	9	...	...	...	...	14	...	24	...	...	...	51	...	4	35	63	57	...	3
9	{ Admitted ... 333 Died ... 1	...	89	43	6	20	11	...	2	2	...	...	...	2	...	11	...	...	...	18	...	1	5	63	59	...	2
10	{ Admitted ... 307 Died ... 1	...	63	11	6	14	51	...	...	...	...	...	...	5	...	8	3	...	1	8	1	2	15	36	61	...	2
11	{ Admitted ... 519 Died ... 1	1	210	42	17	36	32	2	11	...	...	3	1	9	...	1	2	4	...	17	1	...	24	37	62	...	7
12	{ Admitted ... 1,236 Died ... 1	6	420	222	18	37	19	...	...	2	...	...	...	25	...	22	10	5	...	5	3	2	47	125	206	...	162
13	{ Admitted ... 1,508 Died ... 1	...	737	86	10	53	34	...	...	...	...	...	...	20	...	27	1	13	2	12	...	2	28	162	313	...	6
14	{ Admitted ... 507 Died ... 1	...	164	24	9	56	27	1	...	3	...	...	...	11	...	10	...	1	1	23	...	4	16	80	64	...	3
15	{ Admitted ... 536 Died ... 1	...	294	36	22	12	36	...	...	...	...	...	...	6	...	4	5	7	2	2	1	4	31	62	55	...	7
{ Admitted ... 9,652 Died ... 2		13	3,843	783	164	421	425	9	50	22	1	24	1	139	...	199	38	54	14	232	21	41	443	1,163	1,403	1	148

* 18 cases of Measles.

† 56 cases of Parotitis.

‡ 181 cases of Foot Sore.

TABLE

3.—REGIMENTS of ROHILCUND													
REGIMENT AND STATION OF 1868.			Date of Arrival from Station previously occupied.	REGIMENTAL STRENGTH.		Admission during 1868.	INVALIDED		DIED		LOSS PER 1,000		
				Number borne on the Rolls.	Average Strength present during 1868.		To their homes for change of air.	For Discharge.	With the Regiment.	Absent from the Regiment.	By Invaliding for Discharge.	By Deaths.	
1	29th Native Infantry, Shahjehanpore	...	} April 1866, from Barrackpore	...	301	} 691	} 58	} 8	} 1	} 2	} 4	} 138	} 628
2	29th Native Infantry, Moradabad	...		...	424								
3	27th Native Infantry, Bareilly	...	March 1868, from Peshawur	...	728	684	72	1	8	8	14	1090	6022
4	4th Bengal Cavalry, Bareilly	...	January 1866, from Peshawur	...	479	385	70	...	15	3	1	3132	685
5	Body Guard, Deyrah and Calcutta	...	.....	.....	131	131	102	...	7	1	...	5343	743
6	Sappers and Miners, Roorkee and Chuckrata Road	...	.....	.....	930	788	100	24	27	9	12	2103	2268
7	3rd Goorkhas, Almora	...	April 1866, from Bhootan	...	792	674	70	14	12	5	3	1515	1010
8	36th Native Infantry, Meerut	...	December 1866, from Alipore	...	777	777	47	25	1	3	6	128	1178
9	14th Bengal Cavalry, Meerut	...	December 1866, from Cawnpore	...	494	338	112	2	1	2	...	202	466
10	19th Native Infantry, Allyghur	...	March 1866, from Bhootan	...	766	599	80	6	11	1	4	1136	673
11	17th Native Infantry, Delhi	...	November 1867, from Barrackpore	...	707	651	116	30	2	18	22	258	5658
REGIMENTS OF ROHILCUND AND MEERUT					6,529	5,708	86	119	85	52	66	1312	1807

4.—REGIMENTS of AGRA.													
1	41st Native Infantry, Agra	...	October 1865, from Peshawur	...	792	777	70	9	23	...	3	2901	670
2	22nd Native Infantry, Morar	...	June 1866, from Umballa	...	786	680	180	...	6	2	1	703	682
3	33rd Native Infantry, Morar	...	March 1867, from Lucknow	...	782	698	103	...	...	2	2	...	612
4	1st Bengal Cavalry, Morar	...	December 1867, from Nowgong	...	501	358	121	10	27	1	1	5006	670
5	8th Native Infantry, Jhansi	...	December 1867, from Bareilly	...	712	581	107	3	4	...	2	12	781
6	2nd Bengal Cavalry, Deolee and Saugor	...	December 1864, from Umritsur	...	452	326	104	4	14	...	2	1007	642
7	26th Native Infantry, Mehidpore and Augur	...	December 1867, from Alipore	...	685	659	121	10	4	9	7	1014	2130
8	10th Bengal Cavalry, Malligaum (6 months)	...	} Temporarily located after return from Abyssinia.	}	452	171†	105	4	16	2	7†	...	...
9	12th Bengal Cavalry, Malligaum (6 months)	...			467	197†	9	4	9	...	1†	...	...
10	12th Native Infantry, Jubbulpore	...	January 1867, from Dorundah	...	706	643	107	24	9	2	2	1210	616
11	35th Native Infantry, Saugor	...	December 1866, from Lullutpore	...	757	726	120	8	5	12	3	1006	1985
REGIMENTS OF AGRA AND CENTRAL INDIA					6,683	5,627	107	76	117	30	31	6111	9110

5.—REGIMENTS of													
1	11th Bengal Cavalry, Umballa	...	February 1866, from Mooltan	...	497	373	100	...	2	2	1	100	600
2	31st Native Infantry,* Umballa	...	April 1866, from Bhootan	...	721	681	70	2	5	3	1	600	600
3	13th Native Infantry, Jullundur and Loodianah	...	March 1867, from Peshawur	...	770	693	150	5	14	10	4	1815	1815
4	15th Native Infantry, Ferozepore	...	January 1866, from Dorundah	...	779	666	78	4	...	3	...	...	600
5	15th Bengal Cavalry, Mooltan	...	January 1866, from Jhansi	...	496	431	100	3	6	...	2	1210	400
6	10th Native Infantry, Mooltan	...	May 1866, from Shahjehanpore	...	767	720	107	9	8	4	...	1013	621
7	1st Goorkhas,* Dhurmsalla	...	March 1867, from Buxa	...	764	692	102	6	8	5	8	1047	1702
8	4th Goorkhas,* Bakloh	...	April 1866, from Almora	...	789	627	125	2	2	1	2	254	681
9	9th Bengal Cavalry,* Meean Meer	...	December 1866, from Peshawur	...	470	310	105	10	1	...	2	213	425
10	20th Native Infantry,* Meean Meer	...	January 1866, from Rawalpindie...	...	731	666	100	21	9	7	3	1231	1368

* The following Regiments joined the Hussar Field Force in October:—9th and 16th

† The death rates for these Regiments for the last six months of the year have not been placed here, because the deaths were in nearly every case the result of disease months is little more than half. The loss in Abyssinia and on board ship, return and returning, was as under:—10th Cavalry, 10 deaths; 12th Cavalry

and MEERUT.

Total Admissions into Hospital, and Deaths in Hospital during the Year.		CAUSES OF ADMISSIONS INTO HOSPITAL, AND OF DEATHS IN HOSPITAL DURING THE YEAR.																									
		Cholera.	Fever.	Dysentery and Di- arrhoea.	Ophthalmia.	Rheumatism.	Veneral Affec- tions.	Scurvy.	Anemia and De- bility.	Guinea Worm.	Dropsy.	Phthisis Pulmon- alis.	Apoplexy.	Neuralgic Affec- tions.	Heart Disease.	Bronchitis and Asthma.	Pleurisy and Pneumonia.	Spleen Disease.	Hepatitis.	Diseases of the Digestive System.	Diseases of the Urinary System.	Diseases of the Ge- nerative System.	Scabies and Skin Diseases.	Abscess & Ulcer.	Injuries.	Punished.	All other Causes.
1	{ Admitted ... 150 Died ... 2	...	44	18	6	13	16	...	...	...	...	1	...	4	...	3	1	...	...	4	...	...	2	19	14	...	5
2	{ Admitted ... 260 Died ... 0	...	65	14	4	22	10	2	1	...	...	...	...	5	2	15	...	...	1	14	...	...	5	43	44	1	2
3	{ Admitted ... 496 Died ... 8	...	155	31	8	24	23	...	6	3	...	...	...	4	...	20	9	4	3	19	1	...	69	63	47	...	7
4	{ Admitted ... 291 Died ... 3	1	87	12	15	14	9	...	...	1	...	...	...	10	...	4	1	1	...	14	1	...	7	30	78	1	5
5	{ Admitted ... 134 Died ... 1	...	33	27	1	2	1	...	...	...	...	...	...	1	1	5	...	8	1	11	...	...	3	9	31	...	...
6	{ Admitted ... 558 Died ... 9	...	320	80	19	50	19	...	28	...	1	1	...	19	3	32	4	3	1	44	1	2	26	73	111	...	21
7	{ Admitted ... 515 Died ... 1	...	181	39	23	40	28	...	2	...	...	1	...	21	...	25	3	2	1	24	1	6	6	60	44	...	8
8	{ Admitted ... 367 Died ... 5	...	112	27	18	18	34	4	12	8	...	...	1	1	...	13	6	...	...	12	...	...	20	35	40	2	4
9	{ Admitted ... 379 Died ... 2	...	105	19	7	25	32	1	6	1	...	2	...	3	...	39	4	1	...	13	...	...	10	47	58	...	6
10	{ Admitted ... 529 Died ... 1	3	137	29	13	29	27	...	9	5	...	2	...	31	1	23	4	...	4	35	1	1	10	52	99	1	13
11	{ Admitted ... 951 Died ... 1	3	671	41	2	13	11	1	80	...	...	...	...	1	...	2	3	27	...	6	...	...	8	31	23	...	29
{ Admitted ... 4,920 Died ... 22		7	1,910	337	116	249	210	8	144	18	1	7	1	100	7	181	35	46	11	196	5	9	166	462	599	5	100

and CENTRAL INDIA.

1	{	Admitted ... 612 Died ... 0	...	165	63	16	27	55	1	1	3	...	...	...	18	...	14	2	...	1	10	...	...	59	107	62	...	8
2	{	Admitted ... 1,225 Died ... 2	...	781	47	20	29	66	1	28	1	2	3	...	10	...	27	5	5	...	21	5	4	20	63	75	...	13
3	{	Admitted ... 713 Died ... 2	1	406	19	11	13	10	...	...	...	...	1	1	...	...	4	2	3	...	7	...	4	48	56	32	...	6
4	{	Admitted ... 434 Died ... 1	...	217	16	11	28	4	1	1	5	...	...	...	3	...	5	3	2	...	5	2	...	14	55	54	...	8
5	{	Admitted ... 622 Died ... 0	...	189	26	17	30	77	1	2	...	...	...	...	17	...	6	10	7	2	20	2	4	30	70	107	...	5
6	{	Admitted ... 699 Died ... 1	...	201	53	12	44	34	...	1	11	...	...	1	7	...	8	3	1	...	17	...	8	25	93	174	...	6
7	{	Admitted ... 1,458 Died ... 1	1	1,125	56	17	27	35	...	5	...	...	1	...	1	...	10	4	5	3	35	...	1	8	53	68	...	3
8	{	Admitted ... 350 Died ... 2	3	126	109	7	17	9	1	5	...	...	...	...	1	...	21	1	...	...	14	...	...	3	8	24	...	1
9	{	Admitted ... 90 Died ... 1	1	39	6	3	5	9	...	...	2	...	...	...	...	...	5	2	...	...	2	...	...	...	7	9	...	...
10	{	Admitted ... 627 Died ... 1	...	375	31	8	16	24	1	5	...	...	1	...	11	...	14	...	2	2	5	1	1	24	30	58	4	14
11	{	Admitted ... 872 Died ... 4	...	531	46	6	18	27	...	5	1	...	1	...	3	...	12	1	1	1	4	...	1	39	99	74	...	2
{		Admitted ... 7,702 Died ... 1	6	4,245	472	128	254	350	6	53	23	2	6	2	71	...	126	33	26	9	140	10	23	270	641	737	4	65

the PUNJAB.

1	{	Admitted ... 111 Died ... 1	...	23	14	1	8	6	...	1	...	...	...	...	1	...	...	3	...	...	8	1	...	1	6	37	...	1
2	{	Admitted ... 494 Died ... 1	...	232	62	16	16	40	2	4	2	...	1	...	1	...	8	...	6	2	10	1	...	10	42	23	...	7
3	{	Admitted ... 1,036 Died ... 1	...	529	76	4	32	36	...	2	7	...	1	...	28	...	25	8	1	...	64	...	...	37	96	62	...	10
4	{	Admitted ... 517 Died ... 2	...	308	16	29	14	8	...	2	...	...	2	...	3	2	5	3	3	...	15	...	1	2	83	15	...	6
5	{	Admitted ... 386 Died ... 1	...	129	44	45	27	10	1	...	5	3	1	...	5	...	8	1	...	1	12	8	2	2	44	36	...	2
6	{	Admitted ... 626 Died ... 2	...	320	38	10	14	20	3	8	1	...	2	...	18	...	17	7	...	...	24	...	3	16	84	35	2	4
7	{	Admitted ... 699 Died ... 2	...	375	85	19	40	28	...	6	...	...	...	...	5	...	9	...	2	2	22	...	3	8	45	...	1	3
8	{	Admitted ... 752 Died ... 1	...	360	80	2	20	18	...	4	...	...	...	1	11	1	8	5	8	...	21	2	2	5	31	20	1	1
9	{	Admitted ... 326 Died ... 0	...	124	47	10	11	10	...	1	...	...	...	...	5	...	6	...	2	...	4	1	...	3	38	62	...	2
10	{	Admitted ... 572 Died ... 1	...	203	48	19	41	20	1	2	9	...	1	...	2	1	11	3	...	2	25	...	...	24	43	112	...	5

Cavalry; 20th, 24th, and 31st Native Infantry; and 1st, 2nd, and 4th Goorkhas.

contracted in Abyssinia. A large proportion of each of the four Regiments which served in Abyssinia went on furlough, hence the aggregate of the strength, for the last six 2 deaths; 21st Native Infantry, 7 deaths; and the 23rd Native Infantry, 14 deaths; these deaths are not included either in the General or Regimental Tables.

5.—REGIMENTS

REGIMENT AND STATION OF 1888.	Date of Arrival from Station previously occupied.	REGIMENTAL STRENGTH.		Admission-rate of 1888 per cent. of the Average Strength.	INVALIDED		DIED		Loss per 1,000	
		Number borne on the Rolls.	Average Strength present during 1888.		To their homes for change of air.	For Discharge.	With the Regiment.	Absent from the Regiment.	By Invaliding for Discharge.	By Deaths.
11 21st Native Infantry, Meean Meer, (6 months)†...	After return from Abyssinia ...	471	471	102	23	...	1	2	...	...
12 10th Bengal Cavalry,* Rawul Pindee ...	March 1868, from Morar ...	503	503	101	8	4	2	...	7.97	8.98
13 24th Native Infantry,* Rawul Pindee ...	February 1868, from Peshawur ...	748	649	138	5	3	2	6	4.01	10.69
14 2nd Goorkhas,* Rawul Pindee ...	January 1864, from Deyrah ...	749	732	101	...	22	13	3	29.37	21.34
15 23rd Native Infantry, Rawul Pindee, (5 months)†	After return from Abyssinia ...	467	467	67	37	...	...	2	...	...
16 4th and 5th Companies, Sappers, Peshawur ...	March 1867, from Roorkee ...	156	127	126	...	...	6	...	...	47.25
17 3rd Bengal Cavalry, Peshawur ...	March 1866, from Barolly ...	481	447	108	12	13	4	6	27.03	20.79
18 18th Bengal Cavalry, Peshawur ...	December 1867, from Rawul Pindee ...	453	392	200	17	5	4	2	11.51	13.25
19 19th Bengal Cavalry, Peshawur ...	November 1866, from Meean Meer ...	417	403	125	7	5	2	1	11.15	6.71
20 3rd Native Infantry, Peshawur ...	February 1868, from Meean Meer ...	776	716	100	4	19	13	1	24.14	18.04
21 25th Native Infantry, Peshawur ...	January 1868, from Delhi ...	687	687	216	21	12	13	2	18.92	21.83
22 28th Native Infantry, Peshawur ...	February 1867, from Meerut ...	619	606	177	32	11	11	7	17.77	29.08
23 45th Native Infantry, Peshawur ...	June 1866, from Jullundur ...	692	684	105	39	33	18	8	17.39	37.57
REGIMENTS OF THE PUNJAB ...		13,562	12,263	121	267	182	124	63	14.12	13.79
REGULAR NATIVE ARMY OF THE PRESIDENCY ...		45,844	40,940	106	922	646	450	294	14.13	16.22

6.—REGIMENTS of the

1 Peshawur Mountain Train,† Abbottabad ...	April 1865, from Kohat ...	154	146	129	2	...	...	...	...	...
2 Huzara Mountain Train,† Abbottabad ...	April 1866, from Kohat ...	161	149	143	3	3	...	...	1.95	...
3 5th Goorkhas,† Abbottabad ...	Stationary ...	728	647	121	...	14	7	2	10.03	12.36
4 2nd Punjab Infantry,† Abbottabad ...	{ December 1865, from Dera Is- mail Khan. }	741	704	101	3	7	6	...	9.45	8.34
5 Guide Corps, Murdan ...	Stationary ...	962	886	108	9	22	9	5	22.57	14.55
6 2. Field Battery, Kohat ...	{ January 1866, from Dera Ismail Khan. }	107	96	176	3	5	...	1	8.71	6.34
7 4. Garrison Company, Kohat ...	Stationary ...	55	55	10	...	...	...	...	...	...
8 3rd Punjab Cavalry, Kohat ...	March 1866, from Bunnoo ...	404	404	131	7	13	1	2	26.32	6.67
9 1st Sikhs, Kohat ...	May 1866, from Peshawur ...	775	643	70	15	19	2	5	24.52	9.93
10 3rd Punjab Infantry, Kohat ...	November 1867, from Bunnoo ...	761	599	...	14	11	16	3	11.15	24.67
11 6th Punjab Infantry, Kohat ...	January 1866, from Bunnoo ...	770	667	...	11	15	7	1	19.49	10.39
12 3. Field Battery, Bunnoo ...	January 1865, from Kohat ...	106	93	210	3	...	...	...	...	...
13 4th Punjab Cavalry, Bunnoo ...	March 1866, from Dera Ismail Khan ...	378	333	107	16	10	2	...	16.46	5.29
14 5th Punjab Infantry, Bunnoo ...	June 1866, from Kohat ...	646	605	151	5	12	5	4	1.58	15.90
15 1. Field Battery, Dera Ismail Khan ...	December 1865, from Bunnoo ...	108	89	152	2	4	1	...	17.04	9.26
16 1st Punjab Cavalry, Dera Ismail Khan ...	{ February 1866, from Dera Ghazee Khan. }	460	302	63	...	10	3	1	20.41	6.16
17 1st Punjab Infantry, Dera Ismail Khan ...	December 1865, from Abbottabad ...	791	586	74	7	21	3	1	26.56	5.96
18 4th Punjab Infantry, Dera Ismail Khan ...	January 1866, from Kohat ...	777	629	62	7	16	1	1	20.50	2.57
19 2nd Punjab Cavalry, Dera Ghazee Khan ...	February 1866, from Rajanpore ...	497	275	202	7	6	2	5	12.07	14.08

* These Regiments joined the Huzara

† See Note on

‡ These Regiments joined the

§ 12 Killed

6.—REGIMENTS of 40

REGIMENT AND STATION OF 1868.	Date of Arrival from Station previously occupied.	REGIMENTAL STRENGTH.		INVALIDED		DIED		Loss over 1,000	
		Number borne on the Rolls.	Average Strength present during 1868.	To their homes for change of air.	For Discharge.	With the Regiment.	Absent from the Regiment.	By Discharge.	By Death.
20 2nd Sikhs, Dera Ghazee Khan	February 1865, from Rajanpore ...	735	501	10	11	7	2	1100	1224
21 4th Sikhs, Dera Ghazee Khan	May 1860, from Mooltan ...	742	615	1	15	3	4	2000	2435
22 5th Punjab Cavalry, Rajanpore	January 1866, from Kohat ...	495	417	3	8	...	...	1000	...
23 Escort, Bhawalpore ... ..	.....	...	277	...	...	(2)	...	...	...
24 3rd Sikhs,* Peshawur	October 1867, from Kohat ...	720	577	50	25	15	7	1000	5000
REGIMENTS OF THE PUNJAB FRONTIER FORCE ...		12,202	10,293	178	217	90	44	2000	10000

7.—REGIMENTS OF THE CENTRAL

1 Bhopal Battalion, Sehore ... ..	...	929	870	6	20	6	1	...	...
2 Erinporeah Irregular Force .. ..	...	837	864	6	13	4	...	...	...
3 Deolee Irregular Force ... ..	...	886	766	5	6	9	...	...	...
4 Meywar Bheel Corps, Kherwarrah ... ..	...	703	631	...	4	9	...	...	...
5 Malwa Bheel Corps, Sirdarpore ... ..	...	529	363	8	10	2	3	...	...
6 1st Central India Horse, Goonah ... ..	...	499	405	...	6	5	...	...	...
7 2nd Central India Horse, Augur ... ..	...	495	338	...	...	2	1	...	...
REGIMENTS OF THE CENTRAL INDIA IRREGULAR FORCE ...		4,859	4,237	25	59	37	5	...	...

* This Regiment joined the

STATEMENT SHOWING THE GAIN AND LOSS IN STRENGTH

Present with their Regiments on 1st January 1868	...	...	...	...	45,053
At their homes on Furlough	...	...	...	...	417
At their homes on Sick Leave	...	...	...	...	587
Remaining sick in the Hospitals of other Regiments	...	...	...	...	60

Total Strength on 1st January 1867 ... 46,147

ADDITIONS OF THE YEAR.

Transfers received from other Regiments	...	...	...	...	20
Recruits received during the year	...	...	...	...	5,071
Deserters rejoined	...	...	...	...	7

Total Gain ... 5,098

† This Statement includes the Strength and the Loss of the

ANNUAL RELIEF OF THE

CAVALRY REGIMENTS.

3rd Cavalry	From Peshawur	To Jhelum	... Arrived	December 1868.
5th Cavalry	" Seetapore	" Nowshera	... Arrived	March 1869.
10th Cavalry	" Abyssinian Expedition	" Sealkote	... Arrived	January 1869.
11th Cavalry	" Umballa	" Allahabad and Barrackpore	... Arrived	December 1868.
12th Cavalry	" Abyssinian Expedition	" Umballa	... Arrived	December 1868.
17th Cavalry	" Barrackpore	" Seetapore and Fyzabad	... Arrived	January 1869.

INFANTRY REGIMENTS.

1st Native Infantry	" Dum-Dum	To Agra and Futtehghur	... Arrived	November 1868.
10th Native Infantry	" Mooltan	" Cawnpore	... Arrived	January 1869.
11th Native Infantry	" Dinapore	" Dum-Dum	... Arrived	November 1868.
12th Native Infantry	" Jubbulpore	" Sealkote	... Arrived	February 1869.
16th Native Infantry	" Fyzabad	" Moradabad and Shahje-	...	...
18th Native Infantry	" Bhaugulpore	hanpore	... Arrived	March 1869.
19th Native Infantry	" Allyghur	" Goruckpore	... Arrived	December 1868.
		" Peshawur	... Arrived	November 1868.

PUNJAB FRONTIER FORCE,—(continued.)

Total Admissions into Hospital, and Deaths in Hospital during the year.		CAUSES OF ADMISSIONS INTO HOSPITAL AND DEATHS IN HOSPITAL DURING THE YEAR.																										
		Cholera.	Fever.	Dysentery and Diarrhoea.	Ophthalmia.	Rheumatism.	Veneral Affec- tions.	Scurvy.	Anæmia and De- bility.	Dropsy.	Phthisis Pulmon- alis.	Apoplexy.	Neuralgic Affec- tions.	Heart Diseases.	Bronchitis and Asthma.	Pleurisy and Pneumonia.	Spleen Disease.	Hepatitis.	Diseases of the Di- gestive System.	Diseases of the Urinary System.	Diseases of the Ge- nerative System.	Scabies and Skin Diseases.	Guinea Worm.	Abscess and Ulcer.	Injuries.	Punished.	All other Causes.	
20	{ Admitted ... 444	...	200	17	6	22	7	2	1	19	...	14	6	1	...	19	1	...	11	...	11	1	52	59	...	8
21	{ Admitted ... 602	...	255	26	15	21	4	...	10	...	2	1	20	...	22	11	4	1	25	3	2	12	...	115	47	2	4	
22	{ Admitted ... 345	...	122	5	14	6	5	1	15	...	...	1	5	...	4	3	1	1	4	...	...	4	2	51	93	...	8
23	{ Admitted ... 272	...	148	7	6	9	9	1	...	1	1	...	4	...	8	5	...	...	8	1	...	5	...	25	31	...	3
24	{ Admitted ... 1,220	...	405	328	10	34	22	...	2	...	3	...	8	...	76	7	3	...	64	...	6	23	6	52	161	5	7	
{ Admitted ... 11,104		1	4,511	1,108	264	398	219	15	70	1	17	8	197	1	336	92	39	16	465	44	26	262	124	1,262	1,193	29	102	

INDIA IRREGULAR FORCE.

1	{	Admitted	...	949	...	509	50	34	32	16	...	1	...	...	...	16	...	14	2	1	3	20	...	5	8	1	68	61	...	8
2	{	Admitted	...	607	...	183	28	35	21	47	...	...	1	...	...	7	...	11	1	...	...	18	2	...	4	38	71	101	...	11
3	{	Admitted	...	426	...	107	9	30	22	30	1	...	...	...	...	10	...	4	2	2	...	6	...	4	19	36	4	61	...	10
4	{	Admitted	...	553	...	240	22	35	18	1	...	1	1	...	...	3	...	13	7	...	...	10	1	...	32	35	75	51	...	8
5	{	Admitted	...	421	...	164	29	35	27	9	1	2	...	1	...	11	...	3	6	3	1	6	1	1	5	48	25	26	...	17	
6	{	Admitted	...	180	...	51	17	4	9	24	...	...	1	...	...	6	...	3	2	1	1	5	1	2	6	3	15	20	...	6
7	{	Admitted	...	289	...	126	17	11	12	17	...	...	...	...	...	6	...	...	2	...	2	3	2	...	1	7	18	59	...	3
		{	Admitted	...	3,428	...	1,473	172	184	141	144	2	4	3	1	...	59	...	52	22	7	7	104	7	15	78	166	315	220	...	63

Huzara Field Force in August.

OF THE REGULAR NATIVE ARMY OF BENGAL DURING 1869.

PERMANENT LOSS OF THE YEAR.

Deaths at Head Quarters	...	...	...	...	...	408
Deaths at Out-posts and in Detachments	...	...	...	...	...	135
Deaths while at home on Furlough	...	...	...	...	...	62
Deaths while at home on Sick Leave	...	...	...	...	...	177

Total Deaths ... 777+

Invalided for Discharge	...	...	...	...	...	651
Transfers given to other Regiments	...	...	...	...	...	67
Discharged for other reasons, struck off for bad conduct, desertions, &c.	...	...	...	...	...	3,050

Total Loss ... **1,573**

Remaining on the Regimental Rolls on 31st December 1868	13,670
---	-----	-----	-----	--------

Regiments attached to the Abyssinian Expeditionary Force.

NATIVE ARMY, 1868-69.

INFANTRY REGIMENTS.—continued.

10th Native Infantry	From Meeran Meer	To Tallagunge	... Arrived	February	1869.
11st Native Infantry	" Abyssinian Expedition	" Meeran Meer	... Arrived	August	1868.
13rd Native Infantry	" Abyssinian Expedition	" Rawul Pindee	... Arrived	August	1868.
16th Native Infantry	" Melidpore and Augur	" Umballah	... Arrived	January	1869.
19th Native Infantry	" Moradabad and Shahjehan- pore.	" Jhelum	... Arrived	March	1869.
10th Native Infantry	" Cawnpore	" Jhelum	... Arrived	December	1868.
11st Native Infantry	" Umballa	" Nowshera	... Arrived	November	1868.
12nd Native Infantry	" Buxa	" Dinapore	... Arrived	January	1869.
16th Native Infantry	" Saugor	" Meeran Meer	... Arrived	March	1869.
17th Native Infantry	" Gorruckpore	" Bhagulpore	... Arrived	December	1868.
18th Native Infantry	" Nagode	" Fyzabad	... Arrived	November	1868.
10th Native Infantry	" Banda and Nowgong	" Agra	... Arrived	February	1869.
11st Native Infantry	" Azra	" Buxa	... Arrived	December	1868.
16th Native Infantry	" Pe-hawur	" Mooltan	... Arrived	December	1868.
2nd Goorkhas	" Rawul Pindee	" Deyrah	... Arrived	April	1869.

3. JAIL POPULATION, 1868.

3. JAILS OF THE BENGAL PRESIDENCY, 1868.

I.

TABLE showing the SICKNESS and MORTALITY among the JAIL POPULATION of the BENGAL PRESIDENCY during the Year 1868, and the prevalence of the principal Diseases in each Month of the Year.

MONTHS.	Average Strength.	Average Number Daily Sick.	Number Daily Sick per cent. of Strength.	Number of Deaths.	Died per 1,000 of Strength.	CAUSES OF DEATHS.																
						Cholera.	Smallpox.	Fevers.	Apoplexy.	Dysentery.	Diarrhoea.	Hepatitis.	Spleen Disease.	Respiratory Diseases.	Heart Diseases.	Phthisis Pulmonalis.	Dropsy.	Scurvy.	Atrophy and Anemia.	Wounds and Accidents.	All other Causes.	
January ...	53,246	1,505	2.83	168	...	1	...	31	1	57	19	...	1	25	1	7	7	...	7	2	9	...
February ...	53,138	1,461	2.75	121	...	3	...	33	2	32	14	...	1	9	1	4	4	...	9	1	6	...
March ...	53,205	1,516	2.85	130	...	14	1	33	1	29	10	1	2	10	1	5	3	...	7	2	10	...
April ...	53,618	1,591	2.97	144	...	33	...	26	1	35	7	...	1	22	...	6	3	...	7	1	6	...
May ...	53,534	1,542	2.82	110	...	26	1	11	3	25	4	...	1	10	...	6	...	...	7	6	4	...
June ...	54,300	1,469	2.71	103	...	9	...	5	4	26	10	1	2	10	...	9	4	...	7	1	13	...
July ...	55,309	1,454	2.63	110	...	11	...	18	4	24	10	...	...	7	...	9	2	...	12	...	13	...
August ...	55,917	1,602	2.86	110	...	6	...	10	1	32	14	...	2	8	...	5	...	...	7	2	12	...
September ...	56,784	1,697	2.99	171	...	2	...	18	2	66	24	1	2	12	2	5	...	...	14	...	18	...
October ...	57,959	1,826	3.15	170	...	4	...	13	2	56	20	1	2	7	1	10	6	1	20	1	17	...
November ...	58,315	1,910	3.28	174	...	18	...	27	...	53	16	...	2	11	1	9	2	...	22	3	19	...
December ...	58,220	1,615	2.77	156	...	10	...	16	...	51	22	1	2	12	...	9	2	2	15	2	12	...
						137	2	241	21	496	161	5	18	143	12	91	37	5	138	21	136	
						Died per 1,000 of the Average Strength.																
For the year ...	55,287	1,605	2.90	1,674*	30.28	2.48	.04	4.36	.38	12.06	.09	.33	2.59	.21	1.64	.67	.09	2.50	.38	2.46		

CAUSES OF ADMISSIONS.	NUMBER OF ADMISSIONS INTO HOSPITAL IN EACH MONTH.												Total Admissions during the Year.	Admitted per cent. of Strength.	Died per cent. of Admissions.	
	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.				
Cholera ...	3	11	31	61	62	20	24	15	7	11	44	32	321	.68	42.65	
Smallpox ...	2	4	11	13	12	2	...	...	...	...	2	9	56	.10	3.57
Fever, Intermittent ...	1,203	1,185	1,399	1,420	1,434	1,410	1,617	1,959	1,769	2,522	2,274	1,552	19,744	35.71	38	
" Remittent ...	145	168	177	153	97	67	91	68	74	87	81	50	1,258	2.28	13.12	
" Continued ...	1	3	1	2	6	10	6	1	2	2	1	...	35	.07	60.00	
Apoplexy ...	344	342	339	427	422	423	478	611	618	583	541	428	5,590	10.06	6.57	
Dysentery ...	288	240	418	456	392	399	457	550	483	359	339	290	4,591	8.31	6.57	
Diarrhoea ...	5	6	3	2	9	8	6	2	6	4	7	3	56	.10	8.93	
Hepatitis ...	32	28	33	32	29	35	34	30	30	43	34	32	392	.71	4.50	
Spleen Disease ...	163	167	178	133	130	108	105	127	122	153	136	146	1,687	3.05	8.48	
Respiratory Diseases ...	6	14	15	22	19	11	25	22	16	9	19	22	200	.36	45.50	
Phthisis Pulmonalis ...	16	6	8	10	16	15	12	13	10	11	20	16	151	.27	24.50	
Dropsy ...	40	35	34	46	36	48	52	63	75	74	52	67	622	1.12	22.19	
Atrophy and Anemia ...	16	11	15	9	23	20	28	27	28	32	21	15	245	.44	2.04	
Scurvy ...	113	108	112	91	108	113	104	105	115	123	116	120	1,326	2.40	...	
Rheumatism ...	125	102	113	121	99	112	99	101	83	96	63	78	1,192	2.15	...	
Veneral Diseases ...	39	45	68	74	128	84	83	74	69	81	73	47	883	1.60	...	
Eye Diseases ...	528	510	503	443	461	557	575	495	530	491	422	394	5,936	10.73	...	
Abscess and Ulcer ...	148	163	166	171	200	195	206	202	214	169	167	134	2,139	3.87	...	
Wounds and Accidents ...	465	477	510	472	545	500	474	482	443	463	375	449	5,435	10.23	...	
All other Causes ...																
	3,673	3,614	4,131	4,158	4,256	4,132	4,476	4,946	4,695	5,313	4,787	3,868	52,049*			
	Admitted per cent. of the Average Strength in each Month.															
	6.90	6.80	7.76	7.75	7.95	7.61	8.09	8.85	8.27	9.17	8.21	6.61	94.14			

* The details of Admissions and Deaths are given in Table XII, and in the Summary which closes the series of tables for the year.

JAILS OF THE BENGAL PRESIDENCY, 1868.

II.

TABLE showing the SICKNESS and MORTALITY among the JAIL POPULATION in LOWER BENGAL and in ASSAM during the Year 1868, and the prevalence of the principal Diseases in each Month of the Year.

MONTHS.	Average Strength.	Average Number Daily Sick.	Number Daily Sick per cent. of Strength.	Number of Deaths.	Died per 1,000 of Strength.	CAUSES OF DEATHS.																		
						Cholera.	Smallpox.	Fever, Intermittent.	Fever, Remittent.	Fever, Continued.	Apoplexy.	Dysentery.	Diarrhoea.	Hepatitis.	Spleen Disease.	Respiratory Diseases.	Heart Diseases.	Phthisis Pulmonalis.	Dropsy.	Scurvy.	Atrophy and Anemia.	Wounds and Accidents.	All other Causes.	
						1	3	1	1	1	1	31	6	...	1	6	...	4	6	...	5	1	5	
January	14,615	552	3.78	70	...	1	...	1	1	1	1	31	6	...	1	6	...	4	6	...	5	1	5	
February	14,865	519	3.49	58	...	3	...	1	...	...	2	20	5	...	1	5	...	4	4	...	7	...	1
March	14,875	600	3.74	56	...	12	...	3	3	...	...	19	5	...	1	1	...	1	2	...	4	1	3
April	15,072	568	3.77	99	...	32	...	3	4	2	...	23	6	...	1	12	...	4	1	...	6	...	4	
May	15,066	566	3.76	71	...	23	1	2	2	...	1	14	2	...	...	8	...	3	...	...	6	3	6
June	15,406	567	3.68	48	...	3	...	...	1	...	1	17	4	...	...	5	...	4	4	...	6	...	4
July	15,443	564	3.65	48	...	2	...	1	4	...	...	14	6	...	...	2	...	3	2	...	9	...	6
August	15,290	580	3.79	47	...	3	...	1	1	1	...	14	6	...	...	4	...	5	4	...	2	1	4
September	15,226	593	3.90	71	...	...	...	4	2	...	1	33	8	...	1	3	...	4	...	...	7	...	7
October	15,297	635	4.15	73	...	3	...	1	...	...	1	28	14	...	...	2	...	4	5	...	10	1	4
November	15,408	640	4.15	76	...	18	...	2	4	1	...	25	4	...	1	3	...	1	2	...	10	1	4	
December	15,294	627	4.10	87	...	10	...	1	5	...	...	26	8	1	2	6	...	7	2	...	10	1	8
						110	1	20	27	5	8	204	74	1	8	57	5	46	32	...	50	9	55	
Died per 1,000 of the Average Strength.																								
For the year ...	15,160	581	3.83	802	52.90	7.26	.07	3.43	.53	22.29	.07	.53	3.76	.33	3.03	2.11	...	5.28	.59	...	3.62

CAUSES OF ADMISSIONS.	NUMBER OF ADMISSIONS INTO HOSPITAL IN EACH MONTH.												Total Admissions during the Year.	Admitted per cent. of Strength.	Died per cent. of Admissions.
	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.			
	Cholera ...	2	10	29	57	51	9	10	7	2	9	42	30	256	1.70	42.64
Smallpox ...	...	3	9	9	1	1	...	...	...	...	2	6	31	.20	3.23
Fever, Intermittent ...	533	531	600	600	582	652	680	778	721	961	896	752	8,373	55.23	24
" Remittent ...	22	19	25	29	19	23	26	15	17	25	37	16	273	1.80	11.72
" Continued ...	1	3	...	1	2	1	...	...	1	1	1	...	11	.07	72.73
Apoplexy ...	168	202	207	238	232	247	230	286	283	273	256	204	2,654	16.63	...
Dysentery ...	121	122	221	246	203	185	216	207	225	182	145	111	2,184	14.41	6.71
Diarrhoea ...	3	4	1	...	4	2	4	...	1	...	5	3	27	.18	3.70
Hepatitis ...	20	18	20	18	15	17	24	10	18	19	21	18	218	1.44	3.67
Spleen Disease ...	40	56	75	41	50	46	48	62	51	56	49	69	681	4.56	8.25
Respiratory Diseases ...	3	7	7	10	6	2	5	16	5	3	10	14	88	.58	52.27
Phthisis Pulmonalis ...	8	4	6	6	12	13	10	9	9	8	14	11	110	.72	29.09
Dropsy ...	16	18	20	23	23	29	27	27	30	30	31	30	304	2.01	26.32
Atrophy and Anæmia ...	6	4	6	1	5	10	20	13	7	19	14	8	113	.75	...
Scurvy ...	46	44	41	39	48	43	40	36	44	50	45	51	530	3.50	...
Rheumatism ...	44	41	40	39	53	52	40	42	29	36	15	28	459	3.08	...
Veneral Diseases ...	10	16	19	11	22	14	21	19	17	22	14	10	195	1.28	...
Eye Diseases ...	88	96	103	94	102	102	101	79	96	75	72	53	1,059	6.98	1.33
Abscess and Ulcer ...	48	63	58	60	58	64	65	68	60	54	48	37	680	4.55	...
Wounds and Accidents ...	101	196	177	162	231	220	185	181	*152	221	146	238	2,262	14.92	...
All other Causes ...	1,352	1,457	1,727	1,674	1,738	1,732	1,791	1,855	1,777	2,043	1,865	1,719	20,730	...	...
Admitted per cent. of the Average Strength in each Month.															
	9.25	9.60	11.63	11.11	11.64	11.24	11.60	12.13	11.67	13.36	12.10	11.24	136.74	...	...

JAILS OF THE BENGAL PRESIDENCY, 1868.

III.

TABLE showing the SICKNESS and MORTALITY among the JAIL POPULATION in the DINAPORE, BENARES, OUDE and CAWNPORE DISTRICTS during the Year 1868, and the prevalence of the principal Diseases in each Month of the Year.

MONTHS.	Average Strength.	Average Number Daily Sick.	Number Daily Sick per cent. of Strength.	Number of Deaths.	Died per 1,000 of Strength.	CAUSES OF DEATHS.																		
						Cholera.	Smallpox.	Fever, Intermittent.	Fever, Remittent.	Fever, Continued.	Apoplexy.	Dysentery.	Diarrhoea.	Hepatitis.	Spleen Disease.	Respiratory Diseases.	Heart Disease.	Phthisis Pulmonalis.	Dropsy.	Scurvy.	Atrophy and Anæmia.	Wounds and Accidents.	All other Causes.	
					
January ...	16,341	403	2.47	55	...	...	...	1	...	26	...	10	8	...	...	5	...	2	1	...	...	...	2
February ...	16,105	427	2.65	45	...	...	...	...	1	27	...	9	4	...	...	1	...	1	...	...	1	...	1
March ...	16,337	476	2.91	46	...	2	...	3	...	20	...	8	2	...	1	4	...	2	1	...	...	...	2
April ...	16,684	510	3.06	22	...	1	...	1	...	4	...	8	1	...	...	2	...	1	1	...	...	1	2
May ...	16,832	457	2.69	25	...	3	...	...	...	4	...	2	4	...	1	2	...	...	...	...	1	...	1
June ...	17,043	389	2.28	27	...	3	...	1	...	...	...	6	3	...	2	1	1	2	...	...	2	...	6
July ...	17,433	401	2.30	31	...	7	...	...	3	...	...	2	3	...	...	2	...	5	...	...	2	...	1
August ...	17,758	455	2.56	36	...	3	...	1	1	1	...	11	6	...	...	2	...	2	1	...	5	1	2
September ...	18,234	478	2.62	53	...	1	...	...	3	1	...	22	9	...	1	1	...	1	...	...	9	...	6
October ...	18,586	494	2.66	56	...	1	...	3	...	...	...	18	10	1	2	4	1	4	...	...	9	...	6
November ...	18,663	441	2.36	57	...	...	...	3	3	...	...	17	8	...	...	4	...	7	...	2	3	1	6
December ...	18,671	397	2.13	39	...	...	...	1	3	...	...	14	8	...	...	4	...	2	...	2	3	...	1
						21	...	14	14	63*	4	136	66	1	...	32	2	29	4	2	39	3	35	
Died per 1,000 of the Average Strength.																								
For the year ...	17,400	447	2.57	491	28.22	1.21	6.38*	11.61	1.84	...	1.67	2.24	2.01

CAUSES OF ADMISSIONS.	NUMBER OF ADMISSIONS INTO HOSPITAL IN EACH MONTH.												Total Admissions during the Year.	Admitted per cent. of Strength.	Died per cent. of Admissions.
	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.			
			
Cholera ...	...	1	2	4	11	7	13	7	4	2	2	2	54	31	36.69
Smallpox ...	2	1	1	3	10	1	...	...	1	...	...	1	30	12	...
Fever, Intermittent ...	185	257	315	296	296	265	341	403	324	410	352	263	3,707	21.30	38
" Remittent ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
" Continued ...	116	142	132	89	41	21	24	25	26	26	25	19	686	3.94	14.14
Apoplexy ...	...	...	...	1	1	...	3	...	...	...	...	...	5	...	90.00
Dysentery ...	103	87	89	123	110	96	141	204	205	190	156	124	1,629	9.36	...
Diarrhoea ...	78	59	148	130	118	135	144	196	137	94	96	77	1,409	8.10	9.91
Hepatitis ...	...	1	1	1	2	...	1	...	1	3	1	...	11	...	9.08
Spleen Disease ...	5	6	7	7	10	8	3	10	5	8	3	4	74	...	8.11
Respiratory Diseases ...	21	32	23	17	27	19	19	18	16	38	34	26	294	1.66	10.68
Phthisis Pulmonalis ...	3	3	5	9	9	6	16	6	9	4	7	6	82	...	4.37
Dropsy ...	4	1	...	3	2	1	3	2	1	2	5	3	26	...	15.36
Atrophy and Anæmia ...	11	6	5	14	6	5	13	29	34	23	10	19	176	1.01	23.16
Scurvy ...	3	1	...	...	1	...	1	3	3	2	1	3	17	...	11.77
Rheumatism ...	30	26	23	23	23	24	20	26	28	26	24	21	296	...	...
Veneral Diseases ...	53	33	31	49	23	31	30	29	27	32	23	25	393	...	...
Eye Diseases ...	10	...	15	26	39	28	33	14	33	16	23	15	253	...	...
Abscess and Ulcer ...	174	140	128	133	161	171	207	160	179	163	140	132	1,877	10.79	...
Wounds and Accidents ...	86	48	45	47	55	67	54	70	67	69	53	36	647	3.73	...
All other Causes ...	154	136	173	138	119	92	85	109	130	117	105	98	1,446	8.31	...
	1,005	991	1,149	1,113	1,058	965	1,145	1,313	1,219	1,306	1,066	874	13,102		
Admitted per cent. of the Average Strength in each Month.															
	6.15	6.15	7.03	6.67	6.25	5.66	6.57	7.39	6.69	6.49	5.71	4.68	75.30		

* The outbreak of Jail Fever in the jail at Gondah between January and May was the cause of 80 deaths; excluding these deaths the ratio for Fever for the Province is 1.78 per 1,000.

JAILS OF THE BENGAL PRESIDENCY, 1868.

IV.

TABLE showing the SICKNESS and MORTALITY among the JAIL POPULATION in NAGPORE and CENTRAL INDIA during the Year 1868, and the prevalence of the principal Diseases in each Month of the Year.

MONTHS.	Average Strength.	Average Number Daily Sick.	Number Daily Sick per cent. of Strength.	Number of Deaths.	Died per 1,000 of Strength.	CAUSES OF DEATHS.																		
						Cholera.	Smallpox.	Fever, Intermittent.	Fever, Remittent.	Fever, Continued.	Apoplexy.	Dysentery.	Diarrhoea.	Hepatitis.	Spleen Disease.	Respiratory Diseases.	Heart Disease.	Phthisis Pulmonalis.	Dropsy.	Scurvy.	Atrophy and Anæmia.	Wounds and Accidents.	All other Causes.	
January ...	4,461	217	5.54	13	...	...	...	...	...	...	...	7	4	...	...	...	...	...	...	...	...	...	...	...
February ...	4,420	224	5.07	12	...	...	...	...	...	...	...	2	5	...	...	...	...	...	...	...	...	...	...	...
March ...	4,440	195	4.38	15	...	...	...	...	...	...	...	3	3	1	...	...	...	...	...	...	...	...	...	...
April ...	4,412	205	4.63	18	...	...	...	...	...	...	...	3	...	...	...	...	...	...	...	...	...	...	...	...
May ...	4,378	186	4.25	3	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...
June ...	4,341	177	4.08	7	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...
July ...	4,283	168	3.88	9	...	...	...	...	...	...	...	2	1	...	...	...	...	...	...	...	...	...	...	...
August ...	4,358	196	4.50	5	...	...	...	...	...	...	...	2	1	...	...	...	...	...	...	...	...	...	...	...
September ...	4,408	219	4.90	17	...	...	...	...	...	...	...	6	1	1	...	...	...	...	...	...	...	...	...	...
October ...	4,615	237	5.14	9	...	...	...	...	...	...	...	3	...	...	...	...	...	...	...	...	...	...	...	...
November ...	4,573	239	5.21	9	...	...	...	...	...	...	...	3	...	...	...	...	...	...	...	...	...	...	...	...
December ...	4,555	170	3.73	7	...	...	...	...	...	...	...	5	1	...	...	...	...	...	...	...	...	...	...	...
						6	...	12	7	7	2	37	15	2	...	9	2	1	1	2	7	2	10	
Died per 1,000 of the Average Strength.																								
For the year ...	4,440	205	4.62	122	27.48	1.35	...	5.85	1.45	11.71	1.45	...	2.03	1.45	1.23	1.23	1.45	1.58	1.45	...	...	...	...	2.25

CAUSES OF ADMISSIONS.	NUMBER OF ADMISSIONS INTO HOSPITAL IN EACH MONTH.												Total Admissions during the Year.	Admitted per cent. of Strength.	Died per cent. of Admissions.
	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.			
Cholera ...	...	...	...	...	...	4	2	...	1	...	...	...	7	16	85.71
Smallpox ...	...	...	...	...	1	...	...	...	...	...	...	...	1	02	...
Fever, Intermittent ...	222	152	180	199	191	176	221	275	216	284	226	146	2,500	56.31	48
" Remittent ...	4	6	12	14	11	6	26	16	11	16	3	1	126	2.84	11.11
" Continued ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Apoplexy ...	...	...	...	...	...	...	...	...	...	...	...	...	4	09	50.00
Dysentery ...	36	32	26	25	20	32	33	47	44	34	30	25	384	8.63	...
Diarrhoea ...	51	28	18	20	13	17	29	21	23	18	15	13	266	5.99	8.00
Hepatitis ...	...	1	...	...	...	...	...	1	1	...	...	...	3	07	...
Spleen Disease ...	2	1	2	...	1	2	1	2	1	4	2	2	20	45	...
Respiratory Diseases ...	15	15	26	23	8	15	11	15	20	22	20	20	210	4.73	4.29
Phthisis Pulmonalis ...	...	...	1	...	1	...	...	...	...	1	...	...	3	07	33.33
Dropsy ...	1	...	2	...	...	...	...	...	...	1	1	2	7	16	14.29
Atrophy and Anæmia ...	6	4	5	3	...	3	...	1	2	4	2	2	32	73	21.87
Scurvy ...	1	1	3	1	...	3	...	5	4	3	...	...	21	47	9.52
Rheumatism ...	9	10	17	10	15	22	18	18	19	19	26	22	207	4.66	...
Veneral Diseases ...	9	12	9	8	9	6	9	10	12	6	8	6	104	2.34	...
Eye Diseases ...	3	8	4	5	13	18	11	15	13	15	10	6	121	2.73	...
Abscess and Ulcer ...	93	100	107	82	92	96	68	69	92	119	97	75	1,096	24.55	60
Wounds and Accidents ...	12	12	20	16	20	27	23	14	18	13	21	22	218	4.91	...
All other Causes ...	63	62	49	34	51	58	56	69	60	56	33	29	619	13.94	...
	527	444	481	440	447	487	508	578	567	595	496	373	5,943		
Admitted per cent. of the Average Strength in each Month.															
	11.81	10.05	10.81	9.97	10.21	11.22	11.86	12.26	12.69	12.89	10.85	8.19	133.85		

JAILS OF THE BENGAL PRESIDENCY, 1868.

V.

TABLE showing the SICKNESS and MORTALITY among the JAIL POPULATION in the AGRA, MEERUT, and ROHILCUND DISTRICTS during the Year 1868, and the prevalence of the principal Diseases in each Month of the Year.

MONTHS.	Average Strength.	Average Number Daily Sick.	Number Daily Sick per cent. of Strength.	Number of Deaths.	Died per 1,000 of Strength.	CAUSES OF DEATHS.																	
						Cholera.	Smallpox.	Fever, Intermittent.	Fever, Remittent.	Fever, Continued.	Apoplexy.	Dysentery.	Diarrhœa.	Hepatitis.	Spleen Disease.	Respiratory Diseases.	Heart Diseases.	Phthisis Pulmonalis.	Dropsy.	Scurvy.	Atrophy and Anæmia.	Wounds and Accidents.	All other Causes.
January ...	7,133	100	1.40	16	...	...	...	...	1	...	...	7	1	...	...	5	...	...	...	...	...	1	1
February ...	7,108	95	1.34	6	...	...	...	...	...	...	...	1	...	...	...	...	...	1	...	...	...	1	3
March ...	6,709	91	1.34	8	...	...	...	1	...	...	...	...	...	...	...	2	...	1	...	...	1	...	3
April ...	6,911	103	1.51	7	...	...	...	2	1	1	...	1	...	...	...	2	...	...	...	...	...	...	...
May ...	6,698	115	1.72	4	...	...	...	...	...	...	...	2	...	...	...	...	...	2	...	...	...	...	...
June ...	6,909	126	1.83	9	...	...	...	...	...	1	...	1	2	1	...	3	...	...	...	...	...	...	1
July ...	7,239	129	1.77	12	...	...	...	2	1	1	...	1	...	...	...	3	...	1	...	...	...	...	4
August ...	7,308	134	1.83	13	...	...	...	1	1	1	1	4	1	...	...	3	1	...	...	...	...	...	2
September ...	7,556	145	1.92	14	...	...	...	1	1	1	1	3	3	...	...	3	...	...	...	...	1	1	1
October ...	7,719	136	1.76	11	...	...	...	...	1	1	1	3	2	...	...	1	...	1	1	...	1	1	3
November ...	7,755	117	1.51	8	...	...	...	...	...	2	...	...	1	...	1	1	...	1	...	...	2	...	...
December ...	7,731	101	1.31	11	...	...	...	...	...	3	...	3	5	...	...	...	...	...	...	...	...	...	1
Died per 1,000 of the Average Strength.																							
For the year ..	7,231	117	1.62	122	16.87	...	...	2.63	.40	5.67	.14	.14	3.04	.14	.97	...	.14	.69	.29	2.63	...	...	...

CAUSES OF ADMISSIONS.	NUMBER OF ADMISSIONS INTO HOSPITAL IN EACH MONTH.												Total Admissions during the Year.	Admitted per cent. of Strength.	Died per cent. of Admissions.
	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.			
Cholera ...	1	...	...	...	...	...	...	1	...	...	...	...	2	.03	...
Smallpox ...	...	...	...	...	...	...	...	...	...	...	...	...	1	.01	...
Fever, Intermittent ...	49	61	70	91	99	110	121	169	156	125	78	59	1,167	16.42	.34
" Remittent ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
" Continued ...	2	1	6	11	13	11	8	7	10	1	6	8	84	1.16	17.86
Apoplexy ...	...	...	...	...	...	...	...	1	1	1	...	...	3	.04	100.00
Dysentery ...	12	3	5	13	20	18	18	22	29	20	21	11	192	2.66	9.09
Diarrhœa ...	19	14	11	18	18	27	29	37	21	27	27	11	259	3.56	...
Hepatitis ...	...	...	...	...	...	...	...	...	1	...	...	...	3	.04	33.33
Spleen Disease ...	...	...	...	1	...	3	2	1	1	1	3	3	15	.21	6.67
Respiratory Diseases ...	16	15	22	19	17	10	11	14	9	15	10	9	170	2.35	12.94
Phthisis Pulmonalis ...	...	2	...	2	1	...	1	1	1	...	1	...	9	.13	77.78
Dropsy ...	...	...	...	...	...	1	...	...	...	...	...	...	1	.01	...
Atrophy and Anæmia ...	1	1	3	1	1	4	3	...	...	5	...	2	24	.33	20.73
Scurvy ...	...	...	...	2	10	...	...	1	...	1	...	...	22	.30	4.55
Rheumatism ...	13	10	4	8	7	10	7	11	12	13	7	3	103	1.42	...
Veneral Diseases ...	7	3	10	9	7	9	11	11	9	8	11	5	100	1.39	...
Eye Diseases ...	2	4	5	4	7	6	6	10	4	4	8	2	64	.89	...
Abscess and Ulcer ...	80	63	50	54	54	54	61	54	53	51	55	55	699	9.53	1.40
Wounds and Accidents ...	15	13	15	12	45	23	22	19	27	18	20	16	225	3.11	...
All other Causes ...	22	28	38	42	29	43	49	33	32	23	23	24	396	5.34	...
	236	223	240	287	309	329	350	393	376	317	293	309	3,539		
Admitted per cent. of the Average Strength in each Month.															
	3.34	3.14	3.53	4.21	4.62	4.79	4.93	5.34	4.98	4.11	3.46	2.70	45.91		

JAILS OF THE BENGAL PRESIDENCY, 1868.

VI.

TABLE showing the SICKNESS and MORTALITY among the JAIL POPULATION in the PUNJAB during the Year 1868, and the prevalence of the principal Diseases in each Month of the Year.

MONTHS.	Average Strength.	Average Number Daily Sick.	Number Daily Sick per cent. of Strength.	Number of Deaths.	Died per 1,000 of Strength.	CAUSES OF DEATHS.																		
						Cholera.	Smallpox.	Fever, Intermittent.	Fever, Remittent.	Fever, Continued.	Apoplexy.	Dysentery.	Diarrhoea.	Hepatitis.	Spleen Disease.	Respiratory Diseases.	Heart Disease.	Phthisis Pulmonalis.	Dropsy.	Scurvy.	Atrophy and Anæmia.	Wounds and Accidents.	All other Causes.	
January	10,696	203	1'90	14	...	...	...	...	...	...	...	2	...	...	...	9	1	1	...	...	...	...	...	1
February	10,640	196	1'84	5	...	...	...	...	...	...	...	...	...	...	...	3	...	...	...	...	...	...	...	1
March	10,647	194	1'83	5	...	...	1	...	...	...	...	...	...	...	...	1	...	2	...	...	...	...	...	...
April	10,635	205	1'93	4	...	...	...	...	...	...	...	...	...	...	...	3	...	...	...	...	...	...	...	...
May	10,474	236	2'27	7	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
June	10,623	210	1'99	12	...	...	...	...	1	1	2	1	1	...	...	...	...	...	...	...	...	...	...	...
July	10,911	199	1'82	10	...	...	...	...	...	...	2	1	1	...	...	...	...	...	...	...	...	...	...	...
August	11,144	237	2'13	9	...	...	...	...	...	...	...	1	1	...	...	...	...	...	...	...	...	...	...	...
September	11,308	262	2'32	16	...	...	...	4	...	1	...	2	3	...	1	4	...	...	...	...	...	...	...	...
October	11,742	324	2'76	18	...	...	...	4	2	...	...	4	2	...	...	...	...	...	...	...	3	...	...	...
November	11,917	474	3'98	24	...	...	...	9	2	...	...	8	3	...	...	2	...	...	...	...	...	...	...	...
December	11,969	320	2'67	13	...	...	...	...	...	...	...	3	...	...	...	1	...	...	...	...	...	2	...	...
						...	1	26	5	2	4	23	11	...	3	23	2	8	...	...	7	5	17	
Died per 1,000 of the Average Strength.																								
For the year ...	11,056	255	2'31	137	12'39	...	09	2'99	36	3'08	...	27	2'08	18	72	...	...	63	45	1'54				

CAUSES OF ADMISSIONS.	NUMBER OF ADMISSIONS INTO HOSPITAL IN EACH MONTH.												Total Admissions during the Year.	Admitted per cent. of Strength.	Died per cent. of Admissions.
	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.			
Cholera ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Smallpox ...	...	...	1	1	...	...	...	...	...	...	...	1	3	03	33'33
Fever, Intermittent ...	210	194	174	234	256	207	244	334	323	763	720	330	3,977	35'97	63
" Remittent ...	1	...	2	10	13	6	7	5	10	19	10	6	89	81	7'86
" Continued ...	...	...	...	...	2	7	3	...	...	...	...	...	12	11	33'33
Apoplexy ...	29	18	12	29	40	30	28	53	57	67	76	64	501	4'63	...
Dysentery ...	21	18	20	42	42	35	39	87	67	39	56	18	473	4'26	3'40
Diarrhoea ...	2	...	...	1	2	1	1	1	2	1	1	...	12	11	...
Hepatitis ...	5	4	4	6	3	5	5	7	5	11	5	5	65	56	4'62
Spleen Disease ...	51	39	32	33	19	18	13	18	26	22	19	32	322	2'91	7'14
Respiratory Diseases ...	...	2	2	1	2	3	3	...	1	1	1	2	18	16	44'44
Phthisis Pulmonalis ...	3	...	...	1	2	...	...	1	...	...	...	...	7	06	...
Dropsy ...	6	6	1	5	6	7	10	5	7	10	9	14	86	78	8'14
Atrophy and Anæmia ...	7	6	6	5	7	7	7	5	6	7	6	4	72	65	...
Scurvy ...	15	19	23	11	13	14	21	14	12	15	12	23	190	1'72	...
Rheumatism ...	12	8	20	16	8	14	9	9	6	14	6	14	136	1'23	...
Venerical Diseases ...	14	9	23	23	50	20	13	16	23	20	20	14	250	2'26	...
Eye Diseases ...	93	108	114	90	82	134	136	133	110	94	68	79	1,231	11'04	77
Abcess and Ulcer ...	17	27	24	38	43	24	42	31	33	25	27	27	359	3'25	...
Wounds and Accidents ...	65	55	74	106	115	87	99	90	79	46	66	60	943	8'52	...
All other Causes ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	551	499	535	644	704	619	682	803	756	1,152	1,092	693	8,735		
Admitted per cent. of the Average Strength in each Month.															
	5'15	4'69	5'02	6'06	6'72	5'83	6'25	7'25	6'60	9'81	9'16	5'79	79'01		

JAILS OF THE BENGAL PRESIDENCY, 1868.

VII.

COMPARATIVE STATEMENT of the RATIOS of SICKNESS and MORTALITY among the JAIL POPULATION of the various PROVINCES of the BENGAL PRESIDENCY.

DISEASES.	BENGAL PROPER AND ASSAM.			BEHAR PROVINCES, BENARES, OUDHE AND CAWNPORE.			NAGPORE AND CENTRAL INDIA.			AGRA, MEERUT, AND ROHILCUND DISTRICTS.			PUNJAB.			BENGAL PRESIDENCY.		
	Average Strength	Daily Sick per cent. of Strength	Admitted per cent. of Strength	Average Strength	Daily Sick per cent. of Strength	Admitted per cent. of Strength	Average Strength	Daily Sick per cent. of Strength	Admitted per cent. of Strength	Average Strength	Daily Sick per cent. of Strength	Admitted per cent. of Strength	Average Strength	Daily Sick per cent. of Strength	Admitted per cent. of Strength	Average Strength	Daily Sick per cent. of Strength	Admitted per cent. of Strength
Cholera	170	45.64	7.28	31	38.89	1.21	16	68.71	1.35	03	...	...	...	38.38	03	...	...	...
Smallpox	20	3.23	07	12	...	...	02	...	...	01	...	...	...	...	...	...	...	...
Fever	5703	70	3.43	25.24	71.7	0.35	59.15	89	5.45	17.58	1.80	2.63	36.78	61	2.60	37.90	1.15	1.90
Dysentery and Diarrhoea	3324	6.71	22.96	17.40	9.91	11.01	14.91	8.00	11.71	6.21	9.10	5.87	8.81	3.40	3.08	18.37	6.37	12.04
Hepatitis	18	3.75	07	07	9.09	0.5	07	...	...	04	33.33	1.1	11	...	...	10	8.93	1.20
Spleen Disease	144	3.67	05	42	8.11	0.31	45	...	...	21	6.07	1.14	08	4.63	07	71	4.50	0.8
Ophthalmia	129	...	...	1.45	...	...	2.72	...	...	00	...	...	2.26	...	...	1.00	...	...
Rheumatism	380	...	...	1.70	...	...	4.01	...	...	1.32	...	...	1.72	...	...	2.40	...	...
Scoury	75	...	...	10	11.77	0.2	47	9.52	1.15	30	4.55	1.14	05	...	...	44	2.04	0.9
Dropsy	72	20.09	2.11	15	15.38	0.21	16	14.29	0.35	01	...	...	06	...	...	27	21.50	0.7
Atrophy and Anæmia	201	26.32	3.25	101	22.16	0.21	72	21.87	0.34	33	20.43	0.80	78	8.14	0.72	112	22.19	2.30
Phthisis Pulmonalis	68	52.27	1.03	47	35.37	1.07	07	33.33	0.21	13	77.78	0.97	16	41.44	0.72	36	45.50	1.61
Apoplexy	07	72.73	0.57	03	80.00	0.25	00	80.00	0.15	04	100.00	0.43	11	33.33	0.03	07	8.00	0.8
Respiratory Diseases	456	8.25	3.79	1.60	10.88	1.04	4.73	4.29	2.05	2.35	12.94	0.01	2.91	7.14	2.08	3.05	8.43	2.50
Veneral Diseases	303	...	...	2.26	...	...	2.31	...	...	1.38	...	...	1.23	...	...	2.15	...	...
Abscess and Ulcer	686	1.33	9.95	10.79	61	2.13	24.55	80	2.29	9.53	1.40	2.77	11.04	77	1.72	10.73	0.98	2.67
Injuries	455	...	...	3.72	...	...	4.91	...	...	3.11	...	...	3.25	...	...	3.87	...	...
All other Causes	1492	...	...	8.31	...	...	13.94	...	...	5.34	...	...	6.32	...	...	10.23	...	...
	13671	...	62.99	75.30	...	...	133.95	...	...	49.94	...	...	70.01	...	12.30	91.14	...	10.25

* Jail Fever caused 80 deaths in the Jail at Goudah between January and May; excluding these deaths, the death-rate for Fever for the province is 1.78 per 1,000.

† Excluding the deaths from Jail Fever.

JAILS OF THE BENGAL PRESIDENCY, 1868.

X.

TABLE showing the PREVALENCE of CHOLERA in each MONTH and the DISTRIBUTION of the DISEASE by STATIONS and PROVINCES.

STATIONS.	Average Strength for the year.	NUMBER OF ADMISSIONS INTO HOSPITAL IN EACH MONTH.												Total Admissions of the year.	Admitted per cent. of Average Strength.	Total Deaths of the year.	Died per 1,000 of Average Strength.
		Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.				
Alipore	2,461	1	5	11	1	5	5	1	...	1	1	1	2	37	...	12	...
Baraset	130	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Jessore	766	...	1	1	...	...	1	...	...	1	2	1	...	10	...	1	...
Kishnaghur	368	...	...	...	1	...	...	...	...	...	...	3	...	1	...	...	...
Moorsheadabad	158	...	...	1	1	...	...	...	...	...	...	...	...	2	...	2	...
Howrah	141	...	1	...	...	...	...	...	...	...	...	...	...	1	...	1	...
Hooghly	549	...	...	...	...	...	...	...	...	...	...	...	...	1	...	2	...
Serampore	27	...	...	...	...	...	...	...	...	...	4	...	2	6	...	...	...
Burdwan	324	...	...	...	9	...	...	...	...	...	...	...	...	9	...	...	...
Hanucoorah	404	...	...	...	...	5	...	...	...	...	...	...	...	5	...	2	...
Purulea	141	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Raneegunge	31	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Sooree	302	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Rajmehal and Pakour	111	...	...	2	5	...	...	...	...	...	...	...	...	7	...	4	...
Deoghur and Sub-divisions	89	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Malda	88	...	2	...	1	1	1	...	...	...	...	...	7	12	...	3	...
Dinapore	402	...	...	...	3	...	...	5	1	...	...	...	...	12	...	1	...
Rajahmhye	532	...	...	3	37	17	...	...	...	...	...	1	1	59	...	37	...
Rungpore	309	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Bograh	191	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Mymensingh	395	...	...	...	...	1	...	...	...	...	...	14	...	11	...	8	...
Pubna	149	...	1	...	...	...	...	...	...	...	...	...	...	1	...	...	...
Furzedpore	406	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...
Backergunge	522	...	1	...	...	...	...	1	...	...	...	...	...	2	...	1	...
Noacolly	247	...	...	10	...	9	1	...	...	...	...	9	4	33	...	19	...
Chittagong	231	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Tipperah	323	...	...	...	1	5	...	...	...	...	...	1	11	12	...	4	...
Dacca	427	...	...	...	...	...	...	...	...	...	...	...	...	6	...	1	...
Sylhet	366	...	...	2	1	...	...	1	1	...	...	...	1	6	...	5	...
Shillong	44	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Cachar	191	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Gowalparah	137	...	...	...	...	1	...	...	...	1	4	...	...	5	...	2	...
Gowhatly	143	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...
Seesaugor	100	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Nowgong	80	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Tezporo	170	...	...	...	...	...	...	1	...	...	...	...	...	1	...	...	...
Debrooghur	83	...	...	...	...	...	...	2	...	...	...	...	...	3	...	1	...
Mid																	

STATIONS.	Average Strength for the year.	NUMBER OF ADMISSIONS INTO HOSPITAL IN EACH MONTH.												Total Admissions of the year.	Admitted per cent. of Average Strength.	Total Deaths of the year.	Died per 1,000 of Average Strength.
		Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.				
Allahabad, Central ..	1,849	...	...	2	...	...	...	...	...	...	...	...	...	2	...	2	...
" District ..	558	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Nagode ..	77	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	17,400	...	1	2	4	11	7	12	7	4	2	2	2	54	31	21	121
Raepore ..	391	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Belaspore ..	69	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Bandhara ..	122	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Chanda ..	132	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Nagpore ..	913	...	...	...	...	...	...	1	...	1	...	...	...	2	...	2	...
Chindwarra ..	72	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Wardah ..	57	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Sironcha ..	20	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Mundla ..	40	...	...	...	...	...	2	...	...	...	...	...	...	2	...	1	...
Jubbulpore ..	694	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Dumoh ..	91	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Saugor ..	204	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Nursingpore ..	140	...	...	...	...	...	...	1	...	...	...	...	...	1	...	1	...
Lullutpore ..	166	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Jhansi ..	234	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Seonee ..	110	...	...	...	...	...	2	...	...	...	...	...	...	2	...	2	...
Baitool ..	50	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Schore ..	107	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Hoshungabad ..	290	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Nimar ..	61	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Ajmere ..	377	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Beaur ..	87	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	4,440	...	...	...	...	...	4	2	...	1	...	...	...	7	16	6	135
Muttra ..	198	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Agra, Central ..	1,802	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
" District ..	348	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Etawah ..	224	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Mynpoorie ..	325	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Allyghur ..	359	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Bolundshuhur ..	131	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Shahjehanpore ..	257	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Barilly ..	1,175	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Budaon ..	245	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Saharunpore ..	161	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Bijnore ..	154	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Deyrah ..	43	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Almorah ..	135	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...
Mozuffernuggur ..	119	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Moradabad ..	253	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Meerut, Central ..	1,103	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
" District ..	151	...	...	...	...	...	...	...	1	...	...	...	...	1	...	...	...
	7,231	1	...	...	...	...	...	...	1	...	...	...	...	2	103	...	...
Delhi ..	253	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Rhotuck ..	185	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Hissar ..	179	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Sirsa ..	268	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Kuruaul ..	94	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Umballa ..	603	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
" Gang at Jhugger ..	219	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Loodianah ..	166	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Jullundur ..	331	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Ferozepore ..	338	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Umritsur ..	535	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Lahore, Central ..	1,849	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
" Female Jail ..	150	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Sealkote ..	301	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Dhurnsalla ..	114	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Goordaspore ..	225	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Gojranwalla ..	382	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Gojrat ..	250	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Shahpore ..	329	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Jhelum ..	264	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Montgomery ..	346	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Mooltan ..	691	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Jhung ..	419	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Dera Ghazee Khan ..	367	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Dera Ismael Khan ..	332	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Kohat ..	128	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Bunnoo ..	100	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Rawulpindoe ..	1,213	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Peshawur ..	423	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	11,066	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
BENGAL PRESIDENCY...	55,297	3	11	31	61	62	20	24	15	7	11	44	32	321	58	137	248

JAILS OF THE BENGAL PRESIDENCY, 1868.

XII.

DETAIL of the ADMISSIONS and DEATHS of the JAIL POPULATION of each PROVINCE.
(A Summary of the Annual Returns of the Jails of the Presidency.)

CAUSES OF ADMISSIONS AND DEATHS.	BENGAL PROPER AND ASSAM.		BEHAR PROVINCE, OUDH AND CAWNPORE.		NAGPORE AND CENTRAL INDIA.		AGRA, MEEHUT AND ROHILKUND.		PUNJAB.	
	Strength	Admissions	Strength	Admissions	Strength	Admissions	Strength	Admissions	Strength	Admissions
	Deaths	...	Deaths	...	Deaths	...	Deaths	...	Deaths	...
	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.
Variola	31	1	21	...	1	...	1	...	3	...
Varicella	86	...	6	...	14	...	...	...	3	...
Morbilla	25	...	2	...	...	...	...	...	...	...
Diphtheria	...	...	...	...	...	...	...	...	1	...
Tonsillitis	18	1	4	...	4	...	4	...	13	...
Parotitis	25	1	15	...	5	...	10	...	15	...
Febria, Intermittens	8,222	23	3,716	11	2,400	11	1,186	4	3,920	20
" Remittens et Continua	209	20	685	...	128	...	84	16	102	...
Ophthalmia	187	...	251	...	120	...	61	...	255	...
Erysipelas	23	2	14	1	4	...	2	1	5	1
Erythema	1	...	...	...	1	...	...	...	...	...
Anthrax	17	...	6	1	4	...	8	1	9	...
Furunculul	4	...	13	...	64	...	1	...	10	...
Gangrena	1	...	3	...	1	1	2	1	...	...
Pyæmia	...	1	1	1	...	...	...	...	...	...
Influenza	13	...	1	...	1	...	...	...	8	...
Dysentæria	2,848	104	1,589	17	383	...	192	26	482	11
Diarrhœa	2,176	75	1,152	...	266	...	280	10	468	12
Cholera	256	198	54	...	7	...	1	...	...	...
Rheumatismus	440	...	268	...	189	1	90	1	150	...
Syphilis Primaria	182	...	185	...	35	...	45	...	52	...
" Secundaria	97	2	101	...	16	...	32	1	54	1
Iritis Syphilitica	4	...	1	...	2	...	...	...	4	...
Gonorrhœa	65	...	39	...	10	...	6	...	8	...
Bubo	61	...	34	...	16	...	6	...	17	...
Orchitis	10	...	6	...	8	...	9	...	11	...
Phymosis	22	...	16	...	11	...	3	...	3	...
Verruca	...	...	...	...	...	...	...	...	1	...
Condyloma	3	...	...	...	...	...	2	...	...	...
Lepra	35	1	30	1	12	...	5	...	...	...
Elephantiasis	12	1	1	...	...	...	...	...	...	...
Hydrophobia	...	...	1	1	...	...	...	...	...	...
Scorbutus et Purpura	108	1	17	...	21	...	22	1	73	...
Bronchocele	8	...	2	...	...	...	3	...	...	...
Aphtha	16	...	2	...	6	...	...	...	1	...
Porrigi	5	...	11	...	4	...	...	...	8	...
Scabies	474	...	435	...	129	...	60	...	121	...
Vermes	9	...	8	...	...	...	1	...	9	...
" Tania	...	...	...	...	1	...	...	...	4	...
" Dracunculus	...	...	6	...	43	...	7	...	67	...
Anæmia	41	...	109	20	1	1	...	...	45	...
Cancrum oris	3	...	...	...	...	...	...	...	...	...
Anasarca	90	21	21	...	5	...	...	...	4	...
Scirrhus	6	...	...	...	...	...	...	...	1	...
Scrofula	11	...	10	...	2	...	10	1	3	...
Phthisis Pulmonalis	118	12	65	...	5	1	13	6	30	...
Tuberculosis Mesenterica	9	...	...	...	...	...	...	...	...	...
Abscessus Psoanus	2	...	...	...	...	...	...	...	...	...
Meningitis	3	...	...	...	...	...	...	...	...	...
Encephalitis	1	...	3	...	...	...	1	1	...	...
Apoplexia	9	...	5	...	4	...	3	3	12	1
Paralysis	17	...	13	1	1	1	2	1	6	...
Tetanus	3	...	1	...	1	...	...	...	2	...
Epilepsia	33	2	45	...	4	...	3	...	18	3
Chorea	...	...	2	...	...	...	...	...	...	...
Hysteria	3	...	2	...	...	...	...	...	...	...
Delirium Tremens	...	...	2	...	...	...	...	...	...	...
Mania	85	...	33	1	13	...	12	1	7	...
Melancholia	3	...	...	...	...	...	...	...	...	...
Dementia	9	...	3	1	...	...	...	...	1	...
Cephalæa	16	...	5	...	8	...	5	...	5	...
Neuralgia	25	...	16	...	10	...	2	...	17	...
Sciatica	...	...	...	...	...	...	2	...	6	...
Odontalgia	13	...	8	...	3	...	2	...	3	...
Otitis	49	...	50	...	17	...	7	...	17	...
Amaurosis et Cataracta	4	...	1	...	...	...	...	...	1	...
Cæcitas	6	...	3	...	...	...	1	...	...	...
Pericarditis	4	2	1	...	1	...	2	1	1	1
Morbis Cordis	6	1	7	2	1	2	...	...	2	...
Aneurisma	1	...	...	...	...	...	1	...	...	1
Syncope	...	...	...	...	1	...	...	...	...	...
Phlebitis	2	...	...	...	...	...	...	...	...	...
Epistaxis	6	...	4	...	3	...	1	...	11	...
Laryngitis	8	...	...	...	1	...	...	...	6	...
Bronchitis	232	10	152	10	85	1	70	7	180	1
Pleuritis	86	5	19	2	43	...	47	1	88	2
Pneumonia	219	36	51	19	51	7	36	11	65	15
Gangrena Pulmonum	2	2	...	...	...	...	...	...	...	...
Asthma	79	6	60	2	24	1	7	...	13	1
Ozæna	1	...	3	...	...	...	...	...	4	...
Stomatitis	15	...	2	...	1	1	2	...	3	...
Gastritis	11	...	1	...	...	...	1	...	8	...
Enteritis	2	1	4	3	...	...	2	2	4	1
Peritonitis	3	...	2	...	1	1	2	2	3	3
Ileus	2	...	1	1	...	...	...	...	...	...
Hernia	6	...	3	...	3	1	4	...	5	...
Obstipatio	149	...	63	...	24	...	3	...	39	...
Dyspepsia	459	...	125	...	88	...	26	...	180	...

* In nares and cranial cavities.

CAUSES OF ADMISSIONS • AND DEATHS.	BENGAL PROPER AND ASSAM.		BENAR PROVINCES, OUDE, AND CAWNPORE.		NAGPORE AND CENTRAL INDIA.		AGRA, MERRUT, AND ROHILCUND.		PUNJAB.	
	Admitted.	Dead.	Admitted.	Dead.	Admitted.	Dead.	Admitted.	Dead.	Admitted.	Dead.
Colica	243	...	192	...	93	...	81	...	188	...
Hæmatemesis	7	1	...	...	...	...	...	...	...	...
Melena	1	...	1	...	...	...	...	...	1	1
Hæmorrhoids	53	...	67	...	27	...	8	...	29	...
Fistula in Ano	16	...	7	...	1	...	3	...	6	...
Splenitis	214	...	73	...	19	...	15	...	64	...
Hepatitis	27	...	11	...	4	...	4	...	12	...
Cirrhosis	1	...	1	...	...	...	...	...	...	...
Icterus	31	...	27	...	4	...	10	...	11	...
Ascites	22	...	6	...	2	...	1	...	3	...
Nephritis	4	...	3	...	...	...	16	...	7	...
Hæmaturia	3	...	3	...	3	...	...	...	2	...
Ischuria	2	...	2	...	1	...	...	...	...	...
Diuresis	3	...	...	...	...	...	...	...	...	...
Diabetes	11*	...	...	...	...	...	...	...	3	...
Cystitis	...	...	...	...	...	...	2	...	...	...
Lithiasis	...	...	...	...	...	...	...	...	3	...
Calculus	5	...	1	...	...	...	...	...	...	...
Fistula in Perineo	...	...	1	...	1	...	...	...	...	...
Stricture Urethrae	13	...	14	...	4	...	1	...	3	...
Orchitis	34	...	5	...	5	...	4	...	4	...
Hydrocele	32	...	15	...	3	...	4	...	1	...
Leucorrhœa	...	...	1	...	...	...	...	...	...	...
Ovarian Dropsy	...	...	1	...	...	...	...	...	...	...
Menorrhagia	3	...	6	...	1	...	...	...	1	...
Hysteritis	1	...	...	...	...	...	...	...	...	...
Partus	7	...	17	...	3	...	2	...	26	...
Abortus	9	...	3	...	1	...	...	...	1	...
Lumbago	65	...	5	...	6	...	10	...	26	...
Pleurodynia	4	...	1	...	5	...	1	...	3	...
Arthritis	1	...	2	...	1	...	...	...	...	...
Synovitis	12	...	8	...	4	...	2	...	2	...
Periostitis	4	...	3	...	1	...	...	...	2	...
Exostosis	...	...	1	...	...	...	...	...	...	...
Caries	1	...	4	...	3	...	1	...	...	...
Necrosis	3	...	4	...	1	...	1	...	1	...
Contractura	...	...	...	...	...	...	...	...	1	...
Urticaria	9	...	13	...	6	...	7	...	8	...
Eczema	28	...	13	...	2	...	2	...	10	...
Herpes	30	...	34	...	10	...	53	...	8	...
Lichen	4	...	...	...	...	...	...	...	...	...
Prurigo	1	...	1	...	...	...	...	...	5	...
Impetigo	4	...	33	...	...	...	...	...	...	...
Ecthyma	1	...	3	...	...	...	...	...	...	...
Rupia	1	...	...	...	...	...	...	...	1	...
Psoriasis	28	...	47	...	15	...	4	...	34	...
Phlegmon and Abscess	589	...	1,208	...	357	...	421	...	679	...
Whitlow	50	...	53	...	29	...	3	...	53	...
Ulcer	365	...	578	...	628	...	251	...	457	...
Tumour	5	...	7	...	3	...	1	...	9	...
Atrophy and Debility	270	...	69	...	33	...	25	...	40	...
Burning	32	...	23	...	6	...	9	...	7	...
Dislocation	3	...	11	...	...	...	3	...	4	...
Subluxation	18	...	7	...	4	...	2	...	5	...
Fracture	21	...	93	...	13	...	42	...	18	...
Contusion	395	...	359	...	149	...	145	...	207	...
Incised Wound	147	...	70	...	10	...	13	...	64	...
Gunshot Wound	...	...	1	...	2	...	...	...	2	...
Poisoning	3	...	1	...	2	...	...	...	5	...
Snake Bite	...	...	...	...	2	...	...	...	...	...
Suicide and Suicidal Wound	1	...	1	...	...	...	...	...	...	...
Foreign body in Oesophagus	1	...	...	...	...	...	...	...	...	...
Punished	55	...	77	...	29	...	9	...	47	...
Cause not specified	...	...	3	...	36	...	...	...	...	...

* The whole of these cases are returned by the same Medical Officer.

SUMMARY FOR 1868.

DETAIL of the ADMISSIONS and DEATHS of the EUROPEAN and NATIVE ARMIES and the JAIL POPULATION of the BENGAL PRESIDENCY.

CAUSES OF ADMISSIONS AND DEATHS.	ADMITTED INTO HOSPITAL AND DIED IN AND OUT OF HOSPITAL.									
	EUROPEAN ARMY.		NATIVE TROOPS.						JAIL POPULATION.	
	Bengal Presidency.		Bengal Proper and Assam.		Upper Provinces.		Central India Force.		Punjab Frontier Force.	
	Average Strength 31,690 Admitted ... 44,942 Died ... 635		Strength ... 7,961 Admitted ... 10,583 Died ... 281		Strength ... 32,809 Admitted ... 38,977 Died ... 103		Strength ... 4,047 Admitted ... 3,428 Died ... 42		Strength ... 10,308 Admitted ... 11,104 Died ... 121	
	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.
Variola	14	...	2	...	45	...	...	...	1	...
Varioloides et Varicella	8	...	2	...	10	...	1	...	1	...
Morbili	23	...	15	...	23	...	6	...	...	...
Scarlatina	2	...	...	...	...	...	...	...	...	...
Tonsillitis	553	1	15	...	95	...	8	...	25	...
Diphtheria	...	...	...	...	...	...	...	...	...	...
Influenza	146	1	11	...	47	...	6	...	35	...
Parotitis	11	...	15	...	82	...	4	...	3	...
Portusis	1	...	...	...	...	...	...	...	...	...
Febris Intermittens	10,019	7	3,908	17	16,832	...	1,451	2	4,453	...
" Remittens	1,311	...	62	...	291	...	17	...	45	...
" Continua	3,307	...	16	...	42	...	5	...	13	...
Ophthalmia	819	...	146	...	716	...	184	...	264	...
Erythema	11	...	...	...	5	...	1	...	2	...
Erysipelas	33	...	1	...	14	...	...	...	12	...
Furunculus	397	...	27	...	211	...	13	...	102	...
Anthrax	18	...	6	...	4	...	3	...	6	...
Gangraena	...	...	...	...	1	...	...	...	...	...
Pyemia	1	...	...	...	1	...	...	...	...	...
Dysentery	1,109	...	1,035	17	2,000	...	88	1	518	...
Diarrhoea	2,616	...	704	13	1,291	...	74	...	592	...
Cholera	77	...	62	...	27	...	...	...	1	...
Rheumatismus	1,676	...	518	...	1,298	...	124	...	266	...
Syphilis Primaria	1,776	...	115	...	581	...	67	...	75	...
" Secundaria	778	...	46	...	223	...	11	...	54	...
Iritis Syphilitica	25	...	1	...	6	...	...	...	3	...
Gonorrhoea	2,568	...	56	...	238	...	35	...	48	...
Bubo	628	...	51	...	214	...	21	...	27	...
Orchitis	191	...	18	...	86	...	5	...	0	...
Phymosis	29	...	6	...	17	...	2	...	1	...
Verruca	18	...	1	...	...	...	...	...	...	...
Condyloma	9	...	...	...	5	...	2	...	...	...
Lepra	...	...	1	...	7	...	1	...	2	...
Elephantiasis	...	...	...	...	...	...	...	...	...	...
Hydrophobia	1	...	...	...	...	...	...	...	...	...
Scorbutus et Purpura	24	...	107	...	49	...	2	...	15	...
Ebrietas	762	...	3	...	7	...	1	...	7	...
Bronchocele	2	...	21	...	11	...	...	...	...	...
Aphtha	4	...	...	...	4	...	4	...	...	...
Porrigi	9	...	4	...	10	...	1	...	...	...
Scabies	43	...	304	...	752	...	66	...	1	...
Vermes	10	...	4	...	...	...	...	...	100	...
" Tania	202	...	2	...	1	...	...	...	...	...
" Dracunculus	3	...	8	...	97	...	...	...	3	...
Anaemia	149	...	7	...	107	...	166	...	124	...
Cancerum Oris	...	...	...	...	...	...	...	...	30	...
Anasarca	12	...	5	...	4	...	1	...	...	...
Scirrhus	5	...	...	...	3	...	...	...	...	...
Podagra	7	...	...	...	1	...	...	...	...	...
Scrofula	49	...	1	...	15	...	...	...	...	...
Phthisis Pulmonalis	240	...	11	...	37	...	3	...	...	...
Hæmoptysis	56	...	3	...	15	...	1	...	15	...
Abcessus Psoanus	1	...	...	...	...	...	...	...	2	...
Tuberculosis Mesenterica	...	...	...	...	3	...	...	...	...	...
Morbus Coxæ	...	...	...	...	...	...	...	...	...	...
Encephalitis	7	...	...	...	...	...	...	...	...	...
Meningitis	6	...	...	...	1	...	1	...	...	...
Insolatio	...	...	...	...	2	...	...	...	...	...
Apoplexia	209	...	2	...	9	...	...	...	...	...
Paralysis	54	...	4	...	39	...	8	...	15	...
Tetanus	2	...	2	...	2	...	...	...	...	...
Epilepsia	105	...	2	...	13	...	3	...	3	...
Delirium Tremens	139	...	...	...	...	...	...	...	...	...
Chorea	10	...	...	...	...	...	...	...	...	...
Hysteria	...	...	1	...	...	...	1	...	...	...
Mania	29	...	9	...	7	...	1	...	...	...
Melancholia	6	...	...	...	...	...	...	...	...	...
Dementia	46	...	...	...	...	...	...	...	...	...
Cephalæa	517	...	63	...	76	...	2	...	...	...
Vertigo	...	...	1	...	8	...	14	...	18	...
Neuralgia	115	...	61	...	27	...	4	...	95	...
Sciatica	4	...	9	...	25	...	8	...	20	...
Odontalgia	9	...	68	...	177	...	12	...	10	...
Otitis	324	...	11	...	1	...	...	...	62	...
Dysæcia	14	...	...	...	...	...	...	...	2	...
Cecitas	9	...	2	...	...	...	...	...	6	...
Pericarditis	17	...	1	...	11	...	1	...	...	...
Morbus Cordis	278	...	...	...	...	...	...	...	...	...
Angina Pectoris	11	...	...	...	...	...	...	...	...	...
Aneurisma	23	...	...	...	3	...	...	...	1	...
Palpitatio	22	...	...	...	1	...	...	...	...	...
Syncope	4	...	1	...	3	...	...	...	...	...
Varix	33	...	...	...	...	...	...	...	...	...
Phlebitis	2	...	...	...	...	...	...	...	...	...
Epistaxis	19	...	...	...	...	...	...	...	...	...
Laryngitis	6	...	...	...	...	...	...	...	...	...
Bronchitis	1331	...	474	...	649	...	29	...	261	...
Pleuritis	111	...	13	...	109	...	7	...	29	...
Pneumonia	82	...	25	...	112	...	15	...	68	...
Asthma	14	...	35	...	62	...	9	...	7	...

CAUSES OF ADMISSIONS AND DEATHS.	ADMITTED INTO HOSPITAL AND DIED IN AND OUT OF HOSPITAL.										JAIL POPULATION.	
	EUROPEAN ARMY.		NATIVE TROOPS.						JAIL POPULATION.			
	Bengal Presidency.		Bengal Proper and Assam.		Upper Provinces.		Central India Force.		Punjab Frontier Force.		Bengal Presidency.	
	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.
Gangrenæ Pulmonum	...	...	...	...	...	...	...	...	...	...	2	2
Ozena	3	...	...	...	...	...	...	...	...	...	6	...
Stomatitis	23	...	1	...	17	...	2	...	...	...	22	...
Gastritis	6	2	...	...	3	...	3	2	...	...	21	...
Enteritis	8	2	2	...	4	...	...	...	1	...	12	...
Peritonitis	7	1	2	2	2	...	...	...	3	...	11	10
Obstipatio	92	...	16	...	32	...	10	...	30	...	269	6
Ileus	...	...	1	1	1	1	...	...	...	...	3	...
Hernia	37	...	7	...	6	...	1	...	3	...	21	...
Dyspepsia	1,078	...	137	...	277	...	55	...	55	...	978	...
Colica	267	...	101	...	508	...	25	...	341	...	900	...
Hæmatemesis	13	...	1	...	5	...	...	...	2	...	7	...
Melæna	1	...	...	...	...	...	...	...	...	...	3	...
Hæmorrhoids	250	...	17	...	137	...	6	...	17	...	194	...
Fistula in Ano	24	...	...	...	17	...	1	...	7	...	33	...
Splenitis	153	...	65	...	106	...	7	...	39	...	359	...
Hepatitis	1,578	...	24	...	74	...	7	...	16	...	54	...
Cirrhosis	1	...	...	...	1	...	...	...	...	...	2	...
Icterus	154	...	11	...	46	...	7	...	10	...	83	...
Ascites	10	...	1	...	4	...	2	...	1	...	33	...
Nephritis	41	...	3	...	23	...	...	...	25	...	50	...
Hæmaturia	7	...	...	...	1	...	1	...	...	...	11	...
Ischuria	16	...	...	...	2	...	1	...	...	...	5	...
Enuresis	17	...	...	...	...	...	...	...	...	...	...	...
Diabetes et Diuresis	5	...	...	...	6	...	...	...	6	...	17	...
Cystitis	9	...	1	...	5	...	...	...	...	...	2	...
Lithiasis	3	...	4	...	8	...	...	...	10	...	3	...
Calculus	3	...	...	...	1	...	...	...	3	...	6	...
Stricture Urethre	105	...	6	...	14	...	5	...	4	...	35	...
Fistula in Perineo	5	...	...	...	...	...	...	...	...	...	2	...
Extravasation of Urine	...	...	...	...	...	...	...	...	...	...	...	...
Varicocele	10	...	...	...	...	...	...	...	2	...	...	...
Orchitis	449	...	32	...	84	...	15	...	24	...	52	...
Hydrocele	20	...	1	...	11	...	...	...	...	...	55	...
Hæmatocele	1	...	...	...	...	...	...	...	...	...	...	...
Fungus Testis	2	...	...	...	1	...	...	...	...	...	...	...
Ovarian Dropsy	...	...	...	...	...	...	...	...	...	...	1	...
Leucorrhœa	...	...	...	...	...	...	...	...	...	...	1	...
Paramenia	...	...	...	...	...	...	...	...	...	...	11	...
Hysteritis	...	...	...	...	...	...	...	...	...	...	1	...
Partus	...	...	...	...	...	...	...	...	...	...	55	...
Abortus	...	...	...	...	...	...	...	...	...	...	14	...
Arthritis	35	...	3	...	3	...	7	...	2	...	1	...
Synovitis	63	...	3	...	13	...	4	...	17	...	24	...
Pleurodynia	6	...	3	...	14	...	4	...	1	...	14	...
Lumbago	117	...	34	...	214	...	13	...	131	...	112	...
Neurosis	11	...	...	...	4	...	...	...	10	...	10	...
Caries	6	...	...	...	6	...	2	...	3	...	9	...
Contractura	11	...	...	...	2	...	...	...	...	...	2	...
Periostitis	77	...	3	...	11	...	3	...	3	...	10	...
Exostosis	4	...	...	...	...	...	...	...	...	...	1	...
Skin Diseases	346	...	125	...	414	...	12	...	161	...	412	...
Phlegmon and Abscess	1,595	...	402	...	2,020	...	230	...	546	...	3,254	...
Whitlow	129	...	24	...	97	...	11	...	53	...	188	...
Fleer	1,157	...	284	...	1,155	...	61	...	521	...	2,279	...
Tumour	10	...	6	...	20	...	...	...	4	...	25	...
Atrophy and Debility	411	...	95	...	250	...	4	...	40	...	437	...
Burning	47	...	22	...	121	...	15	...	49	...	77	...
Dislocation	29	...	2	...	21	...	...	...	9	...	21	...
Subluxation	806	...	71	...	243	...	20	...	52	...	34	...
Fracture	146	...	6	...	61	...	3	...	25	...	147	...
Contusion and Contused Wound	1,729	...	332	...	2,252	...	246	...	914	...	1,355	...
Contusion of Brain	5	...	...	...	1	...	...	...	...	...	...	...
Incised Wound	325	...	156	...	164	...	30	...	44	...	304	...
Gunshot Wound	17	...	8	...	47	...	1	...	35	...	5	...
Accident	...	...	...	...	...	...	...	...	...	...	...	...
Suicide and Suicidal Wounds	4	...	1	...	2	...	...	...	...	...	2	...
Removal of Eyeball	1	...	...	...	...	...	...	...	...	...	...	...
Amputation	11	...	1	...	1	...	...	...	...	...	...	...
Poisoning	2	...	...	...	1	...	4	...	6	...	11	...
Snakebite	1	...	...	...	5	...	3	...	1	...	2	...
Struck by Lightning	1	...	...	...	6	...	...	...	...	...	...	...
Drowning	...	...	...	...	...	...	...	...	...	...	...	...
Asphyxia	...	...	...	...	...	...	...	...	...	...	1	...
Foot Sore	114	...	245	...	1,156	...	78	...	358	...	...	...
Murder	...	...	...	...	...	...	...	...	...	...	...	...
Execution	...	...	...	...	...	...	...	...	...	...	...	...
Punished	1	...	3	...	18	...	...	...	20	...	217	...
Causes not specified	23	...	151	...	6	...	...	...	3	...	39	...
Killed in Action	...	...	...	...	...	...	...	...	...	...	...	...
Died absent from their Regiments	...	...	...	...	...	...	...	...	...	...	...	...

RETURN showing in contrast the SICKNESS and MORTALITY of MARRIED and UNMARRIED SOLDIERS.

A-MARRIED SOLDIERS.

[illegible]

Return for Married Soldiers—(continued).

REGIMENT AND STATION.	AVERAGE STRENGTH OF MARSHED MEN.	TOTAL NUMBER OF DAYS SPENT IN HOSPITAL DURING THE YEAR.	AVERAGE NUMBER OF DAYS SPENT IN HOSPITAL BY EACH MAN.	ADMISSION RATE OF THE YEAR PER CENT.	DETAILS OF STRENGTH ACCORDING TO AGE.					DETAILS OF DEATHS ACCORDING TO AGE.					TOTAL ADMISSIONS AND DEATHS DURING THE YEAR.	CAUSES OF ADMISSIONS AND DEATHS.																				
					40 AND UPWARDS.					40 AND UPWARDS.						40 AND UPWARDS.					CHOLERA.	FEVERS.	HEAT APPLIED.	DYSPEPSIA.	DELIRIUM TREMENS.	DIARRHOEA AND DYSENTERY.	HEPATIC.	GENERAL AFFECTIONS.	HEART DISEASES.	PHTHISIS PULMONALIS.	DISEASES OF LUNGS.	OPHTHALMIA.	SCURVY.	ACCIDENT AND INJURIES.	SUICIDE.	ALL OTHER CAUSES.
					Under 20.	20 to 24.	25 to 29.	30 to 34.	35 to 39.	40 and upwards.	Under 20.	20 to 24.	25 to 29.	30 to 34.		35 to 39.	40 and upwards.	Under 20.	20 to 24.	25 to 29.																	30 to 34.	35 to 39.	40 and upwards.
BENARES	Brought forward	351	2,205	64	60	18	86	183	49	15	...	2	4	2	1	...	211	3	62	1	9	7	14	12	2	2	5	5	17	72	1					
...	19th Hussars, Head Quarters	24	70	3	25	...	...	10	10	4	...	...	...	...	...	...	6	...	1	...	2	1	...	...	...	...	...	...	...	...	...
...	58th Regiment (Wing)	36	471	13	133	8	10	13	5	...	...	...	...	1	...	...	48	...	7	...	6	...	...	4	...	6	...	1	19	...	...			
...	C. Brig. F. Bat. R. H. Art.	15	129	8	100	...	3	11	1	...	...	1	1	...	...	...	15	1	2	...	1	1	1	...	1	...	...	...	1	4	...
FYZABAD	1-11th Regiment	100	481	5	57	21	34	33	9	3	...	...	...	...	...	...	57	...	12	...	3	8	3	1	...	1	...	...	3	26	...
...	VIII Brig. E. Bat. R. Art.	24	468	20	108	...	5	9	7	3	...	2	3	1	...	...	26	...	6	4	2	1	4	...	...	1	...	...	...	7	...
LUCKNOW	5th Lancers	56	614	11	64	10	10	20	8	8	...	2	1	1	...	...	36	...	1	1	1	5	5	3	...	1	...	4	3	16	2			
...	55th Regiment	96	350	4	105	...	18	39	31	8	...	...	...	...	...	...	101	...	16	...	46	10	3	...	6	3	17	...	...	...	...	
...	102nd Regiment	115	1,368	12	66	15	10	58	21	11	...	2	1	1	...	...	76	...	16	2	...	1	11	3	...	1	...	9	5	28	...			
...	A. Brig. C. Bat. R. H. Art.	14	152	11	121	...	4	8	2	...	...	...	...	...	...	...	17	...	5	...	...	2	...	...	...	...	...	1	7	...	...			
...	VIII Brig. B. Bat. R. Art.	27	130	5	44	1	7	12	4	3	...	...	...	...	...	...	12	...	3	1	1	1	...	2	...	1	...	2	2	...	...			
...	XXII Brig. 3 Bat. R. Art.	11	14	1	37	...	3	4	4	...	...	...	...	1	...	...	4	...	...	1	...	2	...	...	...	...	...	2	...	...	...		
SINGAPORE	3rd Bat. Rifle Brig. Head Quarters	30	224	7	73	...	10	9	11	...	...	...	...	...	...	...	22	...	9	...	...	1	...	1	...	5	...	1	5	...	...			

[illegible]

Return for Married Soldiers—(continued).

[illegible]

[illegible]

Return for Married Soldiers—(concluded).

REGIMENT AND STATION.		AVERAGE STRENGTH OF MARRIED MEN.	TOTAL NUMBER OF DAYS SPENT IN HOSPITAL DURING THE YEAR.	AVERAGE NUMBER OF DAYS SPENT IN HOSPITAL BY EACH MAN.	ADMISSION RATE OF THE YEAR PER CENT.	DETAILS OF STRENGTH ACCORDING TO AGE.					DETAILS OF DEATHS ACCORDING TO AGE.					TOTAL ADMISSIONS AND DEATHS DURING THE YEAR.	CAUSES OF ADMISSIONS AND DEATHS.																																																																																																																																																																																																																																																																																																																																																																																																
						40 AND UPWARDS.					30 TO 39.						20 TO 29.					10 AND UPWARDS.					CHOLERA.	FEVER.	HEAT APPOXY.	DYSPEPSIA.	DIARRHŒA AND DYSENTERY.	HEPATIC AFFECTIONS.	HEART DISEASES.	PHTHISIS PULMONALIS.	DISEASES OF LUNGS.	OPHTHALMIA.	SCURVY.	ACCIDENT AND INJURIES.	SUICIDE.																																																																																																																																																																																																																																																																																																																																																																										
						Under 20.	20 to 24.	25 to 29.	30 to 34.	35 to 39.	40 and upwards.	Under 20.	20 to 24.	25 to 29.	30 to 34.		35 to 39.	40 and upwards.	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died														{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died	{ Admitted Died

CAMPBELLPORE	F. Brig. D. Bat. R. H. Art.	12	108	9	108	4	5	3	{ Admitted Died	13	2	2	1	2
ATTOCK	XIX Brig. E. Bat. R. Art.	18	285	15	128	1	4	7	{ Admitted Died	23	10	1	1	2
CAMPBELLPORE	20th Hussars	27	204	8	63	4	17	5	{ Admitted Died	17	7	1	2	1
ATTOCK	XXV Brig. 4 Bat. R. Art.	8	5	1	12	2	4	2	{ Admitted Died	1	1	1	1	1
NOWSHERA	77th Regiment	34	304	9	85	2	20	12	{ Admitted Died	20	8	2	6	1
PESHAWAR	36th Regiment	72	507	7	97	2	10	41	{ Admitted Died	70	19	3	9	2
	88th Regiment	69	440	6	61	7	32	24	{ Admitted Died	42	28	1	5	1
	A. Brig. B. Bat. R. H. Art.	17	296	17	147	3	8	6	{ Admitted Died	25	10	2	2	1
	A. Brig. E. Bat. R. H. Art.	13	184	14	169	3	6	4	{ Admitted Died	22	15	1	1	3
	XIX Brig. B. Bat. R. Art.	9	65	7	100	2	6	1	{ Admitted Died	9	5	1	1	1
	XXII Brig. 4 Bat. R. Art.	10	268	27	180	1	6	2	{ Admitted Died	18	10	3	2	1
DARJEELING	XXV Brig. 1 Bat. R. Art.	9	79	9	167	4	3	2	{ Admitted Died	15	7	2	3	1
	58th Regiment, Head Quarters	25	129	5	44	15	7	3	{ Admitted Died	11	3	3	1	2
SUBATHOO	59th Regiment	43	179	4	44	3	13	24	{ Admitted Died	19	4	1	1	5
DUGSHAI	104th Regiment	53	401	8	60	11	36	4	{ Admitted Died	32	5	1	3	6
										4	1	1	1	1
TOTALS FOR MARRIED MEN										2,613	15	823	40	106
										88	9	321	1	8
												145	15	16
												77	158	181
												6	7	1
												2	...	1
												1	1	1

B.—UNMARRIED SOLDIERS.

REGIMENT AND STATION.	DETAILS OF STRENGTH ACCORDING TO AGE.					DETAILS OF DEATHS ACCORDING TO AGE.					TOTAL ADMISSIONS AND DEATHS DURING THE YEAR.	CAUSES OF ADMISSIONS AND DEATHS.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
	OF STRENGTH.					ACCORDING TO AGE.						ACCORDING TO AGE.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
	Under 20.	20 to 24.	25 to 29.	30 to 34.	35 to 39.	Under 20.	20 to 24.	25 to 29.	30 to 34.	35 to 39.		40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.	40 and upwards.

[illegible]

Unmarried Soldiers—(continued.)

REGIMENT AND STATION.	AVERAGE STRENGTH OF UNARMED MEN.	TOTAL NUMBER OF DAYS SPENT IN HOSPITAL DURING THE YEAR.	AVERAGE NUMBER OF DAYS SPENT IN HOSPITAL BY EACH MAN.	ADMISSION RATE OF THE YEAR PER CENT.	DETAILS OF STRENGTH ACCORDING TO AGE.						DETAILS OF DEATHS ACCORDING TO AGE.						TOTAL ADMISSIONS AND DEATHS DURING THE YEAR.	CAUSES OF ADMISSIONS AND DEATHS.																				
					Under 20.						20 to 34.							35 to 49.						CHOLERA.	FEVERS.	HEAT APPOXY.	DROUKNENESS.	DELIRIUM TREMENS.	DIARRHOEA AND DYSENTERY.	HEPATITIS.	VENEREAL AFFECTIONS.	HEART DISEASES.	PHTHISIS PULMONALIS.	DISEASES OF LUNGS.	OPHTHALMIA.	SCURVY.	ACCIDENT AND INJURIES.	SUICIDE.
					Under 20.	20 to 24.	25 to 29.	30 to 34.	35 to 39.	40 and upwards.	Under 20.	20 to 24.	25 to 29.	30 to 34.	35 to 39.	40 and upwards.																						
BAREILLY	9,843	2,03,080	21	133	487	3047	3,353	2178	665	113	8	49	74	62	22	1	{ Admitted 13,085 Died 216 }	31	2,863	53	403	51,134	523	2700	126	62	358	198	7	967	1	3						
... 37th Regiment	669	10,913	16	77	142	201	253	33	37	3	...	...	2	4	...	...	{ Admitted 514 Died 6 }	...	37	1	4	1	29	47	188	8	3	1	12	...	35	...		
ROORKEE	128	2,678	21	120	...	36	45	32	15	...	...	1	2	...	...	...	{ Admitted 154 Died 3 }	...	25	...	3	2	14	7	32	2	...	...	3	10	1	...
... { VIII Brig. D. Bat. R. A. ... }	314	4,332	14	95	2	78	183	36	11	4	2	2	2	3	...	...	{ Admitted 299 Died 9 }	...	87	...	4	1	11	12	26	...	3	11	4	...	33	...				
... { 79th Regiment. Head Quarters }	405	15,108	37	213	2	144	167	89	3	...	5	4	4	1	...	...	{ Admitted 862 Died 10 }	1	296	...	7	...	89	22	54	2	16	52	9	...	69	...				
MERRUT	513	9,478	18	127	40	180	146	91	56	...	3	4	4	2	1	...	{ Admitted 654 Died 14 }	...	170	...	5	...	79	24	69	2	3	43	24	...	42	...						
... 1-3rd Regiment	114	1,681	15	115	4	50	49	9	...	2	...	...	...	...	...	...	{ Admitted 131 Died 1 }	...	28	...	3	1	7	6	20	1	1	5	2	...	5	...
A. Brig. A. Bat. R. H. A. ...	111	1,394	13	90	1	37	31	38	4	...	...	...	...	...	...	...	{ Admitted 100 Died ... }	...	23	...	...	...	1	...	...	...	7	...	...	9	...	...				
A. Brig. D. Bat. R. H. A. ...	131	2,702	21	134	7	46	36	28	12	2	...	1	2	...	...	...	{ Admitted 174 Died 3 }	...	40	...	1	...	18	15	35	2	...	7	3	17	...	...				
XVI Brig. B. Bat. R. A. ...	106	2,179	20	105	...	32	38	21	15	...	...	...	...	2	1	...	{ Admitted 110 Died 3 }	...	14	...	...	...	6	11	16	...	...	14	...	7	...	...				
XIX Brig. C. Bat. R. A. ...	53	888	17	117	...	8	14	15	8	8	...	...	...	1	1	...	{ Admitted 62 Died 2 }	...	11	...	2	...	3	1	9	...	...	4	1	...	...	...			
XXIV Brig. 3 Bat. R. A. ...	340	8,340	25	204	...	43	229	52	15	1	2	{ Admitted 696 Died 2 }	...	331	...	1	4	3	36	47	...	1	36	6	1	45					
... { 79th Regiment (Wing) ... }	38	1,121	29	258	7	8	12	5	1	2	...	...	2	...	...	...	{ Admitted 98 Died 2 }	...	26	...	...	...	23	4	6	...	6	1	...	3	...	...				
XXV Brig. 2 Bat. R. A. ...																																						

MUTTRA	...	410	5,394	13	81	36	112	155	95	8	4	1	4	3	1	{Admitted Died	334 9	104 3	2 3	24 1	8 2	37 2	2 ...	8 ...	16 ...				
AGRA	...	751	13,601	18	10	43	207	131	201	92	77	1	4	1	1	{Admitted Died	752 7	124 1	1 ...	3 51	52 138	21 12	40 11	67 ...					
MORAR	VIII Brig. H. Bat. R. A. ...	115	2,704	24	158	4	40	24	35	11	1	...	...	2	...	{Admitted Died	182 2	29 ...	1 ...	13 3	13 1	1 ...	2 17	28 ...			
	XXII Brig. 7 Bat. R. A. ...	96	1,325	14	100	2	6	63	17	6	2	...	3	1	...	{Admitted Died	96 4	13 1	...	11 3	16 ...	6 1	12 ...						
	... 103rd Regiment ...	680	11,198	16	139	72	183	144	93	185	3	...	2	3	3	1	{Admitted Died	945 9	423 ...	6 3	12 ...	17 121	2 6	15 15	67 1				
	F. Brig. C. Bat. R. H. A. ...	120	3,044	25	195	...	27	54	37	2	...	1	...	1	...	{Admitted Died	234 2	25 ...	1 ...	16 13	41 2	1 ...	8 3	29 ...					
JHANSI	VIII Brig. C. Bat. R. A. ...	131	3,845	29	173	2	33	47	39	9	1	...	...	2	...	{Admitted Died	226 2	44 ...	2 1	11 5	38 1	...	8 2	32 ...			
	XXII Brig. 5 Bat. R. A. ...	57	1,735	30	223	...	4	29	16	3	5	...	1	1	...	{Admitted Died	127 3	45 ...	10 ...	2 4	11 4	5 1	2 4	1 13					
	XXIV Brig. 5 Bat. R. A. ...	58	1,024	18	141	1	15	22	16	3	1	...	...	1	...	{Admitted Died	82 1	36 ...	1 ...	5 3	8 3	2 3	...	11 ...			
	... 93rd Regiment ...	632	11,278	18	204	46	261	224	91	10	...	1	1	4	...	{Admitted Died	1,292 6	673 ...	1 1	6 4	32 121	5 1	2 36	13 55					
SAVOOR	XIX Brig. A. Bat. R. A. ...	120	2,296	19	122	4	28	58	18	12	...	...	1	...	...	{Admitted Died	147 1	23 ...	...	...	4 31	...	1 9	21 ...
	... 1-7th Regiment ...	717	13,402	19	155	52	100	335	195	27	8	...	7	8	4	2	1	420 4	1 ...	11 4	56 117	3 19	33 16	74 ...					
	XVI Brig. E. Bat. R. A. ...	125	2,072	17	204	...	38	54	26	5	2	...	1	1	...	{Admitted Died	255 2	106 1	12 9	25 1	...	4 5	27 ...				
	JUBBULPORE ... {2-12th Regiment, Head Quarters}	732	17,130	23	120	20	303	257	110	39	3	...	3	5	4	1	{Admitted Died	885 13	216 1	2 1	5 ...	97 67	173 ...	18 27	16 45				
UMBALLA	XVI Brig. G. Bat. R. A. ...	117	2,915	25	182	6	41	42	22	5	1	...	1	4	1	1	{Admitted Died	214 7	69 1	...	11 7	24 ...	2 3	5 3	32 1				
	... 21st Hussars ...	323	5,476	17	120	4	8	218	82	6	5	1	1	1	1	{Admitted Died	389 4	147 2	...	7 ...	4 13	23 5	...	26 6	64 1				
	106th Regiment	706	9,830	14	159	6	250	225	120	87	18	1	3	...	2	4	2	530 ...	7 2	10 ...	60 15	92 1	1 ...	26 ...	76 1				
	Carried forward ...	18,655	3,72,174	20	135	990	5566	6,638	38,40	1355	266	16	82	130	106	37	6	6,978 51	94 39	513 4	83 1	2188 40	1035 70	4234 27	226 18	154 2	786 ...	418 10	1020 3	16 9

Unmarried Soldiers—(continued.)

REGIMENT AND STATION.		AVERAGE STRENGTH OF UNMARRIED MEN.	TOTAL NUMBER OF DAYS SPENT IN HOSPITAL DURING THE YEAR.	AVERAGE NUMBER OF DAYS SPENT IN HOSPITAL BY EACH MAN.	ADMISSION RATE OF THE YEAR PER CENT. OF STRENGTH.	DETAILS OF STRENGTH ACCORDING TO AGE.					DETAILS OF DEATHS ACCORDING TO AGE.					TOTAL ADMISSIONS AND DEATHS DURING THE YEAR.	CAUSES OF ADMISSIONS AND DEATHS.																	
						Under 20.	20 to 24.	25 to 29.	30 to 34.	35 to 39.	40 and upwards.	Under 20.	20 to 24.	25 to 29.	30 to 34.		35 to 39.	40 and upwards.																
Brought forward	...	18,655	3,72,174	20	135	990	5566	6,638	3840	1355	266	16	82	130	106	37	6	{ Admitted 25,330 Died 377 }	55	6,978	94	513	83	2188	1035	4234	226	154	786	418	101920	3		
UMBALLA	{ A. Brig. F. Bat. } ... { R. H. A. ... }	114	2,268	20	185	6	27	38	35	8	...	...	...	...	...	1	...	{ Admitted 210 Died 1 }	39	51	39	4	1	40	70	4	20	27	18	...	2	15	9
	F. Brig. E. Bat. } R. H. A. ... }	120	3,479	29	238	...	34	65	20	1	...	...	...	2	...	...	...	{ Admitted 287 Died 3 }	...	77	1	...	...	...	...	...	...	1	10	2	...	15	...
JULLUNDUR	... 92nd Regiment	721	12,591	17	192	93	308	193	100	24	3	5	16	5	3	...	...	{ Admitted 1,381 Died 29 }	...	713	7	11	2	154	22	94	4	7	56	8	...	36	...
	XIX Brig. G. } Bat. R. A. ... }	122	1,004	8	64	1	10	50	38	22	1	...	1	...	...	...	...	{ Admitted 78 Died 1 }	...	9	...	...	...	...	...	...	...	...	...	...	...	6	...
FEROZPORE	... 1-5th Regiment	821	9,002	11	1001	121	501	157	34	8	...	...	2	5	2	...	...	{ Admitted 891 Died 9 }	...	278	6	18	2	54	13	103	11	8	41	8	...	89	...
	XXII Brig. B. } Bat. R. A. ... }	109	4,344	40	344	1	43	49	16	...	...	...	...	...	...	...	...	{ Admitted 375 Died ... }	...	132	2	5	1	19	14	45	...	1	5	6	...	32	...
GOTINDGARH	{ XXIV Brig. } 6 Bat. R. ... } A. ... }	62	735	12	86	...	11	23	11	11	6	...	...	...	...	...	...	{ Admitted 54 Died ... }	...	13	...	1	...	...	...	...	...	2	2	3	...	4	...
MEERAN MEEH	... 85th Regiment	689	17,508	25	209	105	352	132	85	15	...	1	8	8	4	1	...	{ Admitted 1,439 Died 22 }	...	638	20	4	...	118	16	90	2	3	75	9	...	40	1	
	F. Brig. F. Bat. } R. H. A. ... }	116	2,572	31	314	2	25	57	23	9	...	...	...	...	...	...	...	{ Admitted 364 Died ... }	...	198	...	...	...	16	14	7	...	...	4	7	1	29	...
	XIX Brig. F. } Bat. R. A. ... }	121	2,252	19	138	...	51	39	23	8	...	1	1	1	...	...	...	{ Admitted 166 Died 2 }	...	40	...	3	1	15	17	18	...	2	13	2	...	13	...
	XXII Brig. 6 } Bat. R. A. ... }	61	1,075	18	166	...	17	29	10	1	4	{ Admitted 101 Died ... }	...	43	...	2	...	5	14	1	...	2	1	...	8	...
	XXIV Brig. 2 } Bat. R. A. ... }	61	1,161	19	121	13	25	14	7	2	...	...	...	...	...	...	...	{ Admitted 74 Died ... }	...	24	...	1	...	11	1	6	...	3	2	1	...	8	...

ALBION	...	7th Hussars	...	383	4,514	12	92	1	49	200	89	42	2	1	3	1	1	{	Admitted	354	6	67	3	3	1	19	20	28	...	26	7	48	132			
																		{	Died													...				
		38th Regiment	..	828	14,219	17	156	72	186	283	218	66	3	1	4	3	2	{	Admitted	1,208	10	414	42	2	1	101	31	144	27	2	70	37	88	339		
																		{	Died			1	6									1	1			
		F. Brig. B. Bat.	{	107	1,416	13	124	2	19	32	45	9		1				{	Admitted	133	1	20				16	6	8	1	5	1	23	53			
		R. H. A. ...	...															{	Died			1											...		
		109th Regiment	...	619	9,878	16	133	22	254	103	195	30	15	5	1	2	2	{	Admitted	821	10	186	2	21	2	25	13	134	2	3	28	2311	51	1	319	
																		{	Died			1	2										7	7		
		XIX Brig. D.	{	120	1,134	9	93	4	50	34	25	6	1	3		1	2	{	Admitted	111	6	24	2	2		8	7	24		1	2	15	26			
		Bat. R. A. ...	...															{	Died			2	2										1	...	
		XXIV Brig. 1	{	60	674	11	82		24	25	7	2	2		1		1	{	Admitted	49	2	10				1	1	13		1	2	1	20			
		Bat. R. A. ...	...															{	Died														...		
		1-6th Regiment	...	686	10,741	16	158	166	300	142	64	12	2	4	3	3	5	{	Admitted	1,087	15	471	33	2	1	112	8	161	4	1	5	19	23	247		
																		{	Died			2	5			2			3	1			2	2		
		1-19th Regiment	...	746	3,432	4	90	17	145	231	251	82	20	1	3	5	4	{	Admitted	672	13	247		4		87	18	73	4		39	15	43	142		
																		{	Died							3	2		2				6	6		
		F. Brig. D. Bat.	{	122	2,065	17	126	1	29	62	23	6	1					{	Admitted	151		27				5	5	23		1	8	1	24	60		
		R. H. A. ...	...															{	Died														...	...
		XIX Brig. E.	{	117	3,596	31	245		35	53	23	3	3	1				{	Admitted	288	1	161				25	4	20	2		4	5	13	49		
		Bat. R. A. ...	...															{	Died														1	1	
		20th Hussars	...	412	4,185	10	81		4	212	143	37	16		2	2	2	{	Admitted	353	6	81	1	13	4	26	14	63			13	5	47	86		
																		{	Died					1			1						4	4		
		XXV Brig. 4	{	51	1,336	26	202		18	22	10	1						{	Admitted	103		18				15	4	21	1	3	1	3	4	33		
		Bat. R. A. ...	...															{	Died														...	...
		77th Regiment...	...	718	13,728	19	159	30	163	281	210	32	2	2	3		1	{	Admitted	1,140	6	690	1	12		62	25	89	4	7	3	3	53	221		
																		{	Died			2							1	1			2	2		
		36th Regiment...	...	655	14,613	22	201	11	221	259	100	60	4	4	2	2	1	{	Admitted	1,322	10	576	3	3	2	86	28	231	6	8	49	5	66	259		
																		{	Died			4				1	1			2			2	2		
		86th Regiment...	...	668	11,392	17	170	26	105	370	142	23	2	2	4	3	1	{	Admitted	1,134	10	691		8	2	36	28	122	4	3	33	14	58	132		
																		{	Died			3	1		1	1	1			1	1			1	1	
		A. Brig. B. Bat.	{	115	2,476	21	201	2	32	46	35				1			{	Admitted	231	1	137				29	2	10	2		3	2	6	40		
		R. H. A. ...	...															{	Died								1						...	...
		A. Brig. E. Bat.	{	122	2,384	19	221	3	34	55	27	2	1	2	1	1	1	{	Admitted	289	5	184	1			27	4	10	1	1	1	2	9	20		
		R. H. A. ...	...															{	Died			4	1										...	...
		Carried forward	...	28,301	5,32,914	187	142	1689	8038	9,891	5849	1877	354	20	135	189	140	{	Admitted	40,267	55	13,294	218	626	101	3292	1380	5842	303	212	1296	609	23	2780	4	10,319
																		{	Died			95	67	6	3	55	84	4	26	40	23	3	16	71	71	

Unmarried Soldiers—(concluded.)

REGIMENT AND STATION.	AVERAGE STRENGTH OF UNMARRIED MEN.	TOTAL NUMBER OF DAYS SPENT IN HOSPITAL DURING THE YEAR.	AVERAGE NUMBER OF DAYS SPENT IN HOSPITAL BY EACH MAN.	ADMISSION RATE OF THE YEAR PER CENT.	DETAILS OF STRENGTH ACCORDING TO AGE.					DETAILS OF DEATHS ACCORDING TO AGE.					TOTAL ADMISSIONS AND DEATHS DURING THE YEAR.	CAUSES OF ADMISSIONS AND DEATHS.																		
					UNDER 20.	20 TO 24.	25 TO 29.	30 TO 34.	35 TO 39.	40 AND UPWARDS.	UNDER 20.	20 TO 24.	25 TO 29.	30 TO 34.		35 TO 39.	40 AND UPWARDS.																	
Brought forward ...	28,301	5,32,948	18½	142	1689	8638	9,894	5849	1877	354	26	135	180	140	55	10	{ Admitted 40,207 Died 546 }	55	13,294	218	626	101	3292	1380	5842	303	212	1296	609	23	2790	4	10,21	
PESHAWAR ... { XIX Brig. B. } Bat. R. A. ... }	137	3,092	24	193	7	45	46	18	14	1	...	...	2	1	...	...	{ Admitted 253 Died 3 }	...	121	...	...	4	1	9	15	27	...	4	5	...	15	...	...
DARJEELING ... { XXII Brig. 4 } Bat. R. A. ... }	61	2,498	36	293	6	10	21	15	9	1	{ Admitted 179 Died 1 }	...	121	1	...	9	2	9	...	4	1	9
DARJEELING ... { XXV Brig. 1 } Bat. R. A. ... }	53	1,113	21	238	1	33	11	4	4	...	1	1	...	...	...	...	{ Admitted 126 Died 2 }	2	73	...	...	...	...	12	1	11	...	...	2	1	4	...	...
58th Regiment, Head Quarters	378	3,976	11	90	32	128	83	104	26	5	...	1	...	...	...	...	{ Admitted 341 Died 1 }	...	42	...	...	2	2	10	13	37	2	...	30	2	72	...	12
17BATHOO ... 90th Regiment ...	631	8,818	14	76	10	164	268	169	16	4	...	1	3	1	1	...	{ Admitted 483 Died 6 }	...	88	1	1	1	...	51	29	79	3	2	42	11	41	...	13	
106SHAH ... 104th Regiment ...	781	9,562	12	65	17	158	520	82	3	1	...	2	2	5	...	...	{ Admitted 509 Died 9 }	...	88	2	2	...	60	25	59	13	1	20	4	90	...	14	
TOTAL FOR UNMARRIED MEN ...	30,336	561,707	18½	139	1762	9176	10843	6241	1949	365	27	140	188	17	56	10	{ Admitted 42,158 Died 568 }	57	13,830	221	638	107	3413	1465	6064	321	223	1395	628	23	3021	4	10,71	

